

COMMAND AND GENERAL STAFF SCHOOL

MILITARY REVIEW

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September, 1940, Quarterly Review of Military Literature

VOL. XX, No. 78

HEADQUARTERS
FORTY-FOURTH DIVISION
TRENTON

OFFICE OF THE COMMANDING GENERAL

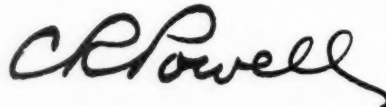
30 July 1940.

To: All Officers.

It is essential that the military student keep abreast of world events at all times. Because of the enormity and complexity of these events and the ever increasing speed of military action, "keeping abreast" is becoming constantly more difficult. I find one of the greatest aids to be a religious study of the COMMAND AND GENERAL STAFF SCHOOL MILITARY REVIEW.

This quarterly publication presents the most complete and unbiased review of military thought that is obtainable today and is the best available means of keeping up with modern tactical doctrines as taught at the Command and General Staff School. Every officer can afford the extraordinarily small subscription of \$1.00 per year, but no progressive officer can afford not to read the MILITARY REVIEW thoroughly and regularly.

In the great mass of military literature currently being produced, the MILITARY REVIEW is outstanding in that it represents most that is worth while after careful selection and analysis by its expert staff. The contents are carefully condensed for busy readers, and, above all, they are comprehensive, authoritative, and trustworthy. Faced with many baffling questions concerning transportation, mechanization, organization, and supply—and with time at a premium, I unqualifiedly recommend the MILITARY REVIEW to all serious military students.



C. R. POWELL
Major General, NJNG
Commanding 44th Division

COMMAND AND GENERAL STAFF SCHOOL
MILITARY REVIEW
QUARTERLY REVIEW OF MILITARY LITERATURE

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September, 1940

Third Quarter

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Books

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The Roots of Strategy.—By Major Thomas R. Phillips

**The Art of Modern Warfare.—By Colonel Hermann Foertsch,
German Army**

Why Europe Fights.—By Walter Millis

The March of the Barbarians.—By Harold Lamb

Failure of a Mission.—By Sir Nevile Henderson

A Concise History of Italy.—By Luigi Salvatorelli

Turkey at the Straits.—By James T. Shotwell and Francis Deak

Revolution—Why, How, When?—By Robert Hunter

The Unfinished War.—By Eric Moore Ritchie

Canada: America's Problem.—By John MacCormac

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**Comments on the contents of the books listed here may be found
on page 78 following.**

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Mission

The object of this publication is a systematic review of current military literature, through cataloging articles of professional value, in selected military and naval periodicals, in the domestic and foreign field.

Articles from foreign periodicals are treated by translations of titles and digests of contents; material of particular importance is covered more extensively in a section of "Foreign Military Digests."

A "Library Bulletin" Section lists books, recently accessioned, which are of particular significance.

This *Review* is published as a guide to modern military tendencies and to inspire vigorous thoughts on the subjects treated.

The opinions expressed and conclusions drawn in articles are *solely those of the authors and are in no sense official.*



Acknowledgment

The editors desire to express their thanks and appreciation to those persons who have valuably assisted in the preparation of material for this issue. The work of contributors has been done in addition to their regular duties and on their own time. We are very grateful to the following officers for their generous donations:

Major William P. Bledsoe: *Withdrawal from Action*

Lieutenant Colonel William A. Campbell: *Doctrines of Withdrawal*

Lieutenant J. Dasher: *Krasnaya Zvezda* (27 November 1939—29 May 1940)

Major General H. B. Fiske: *General Pershing and His Headquarters in France*

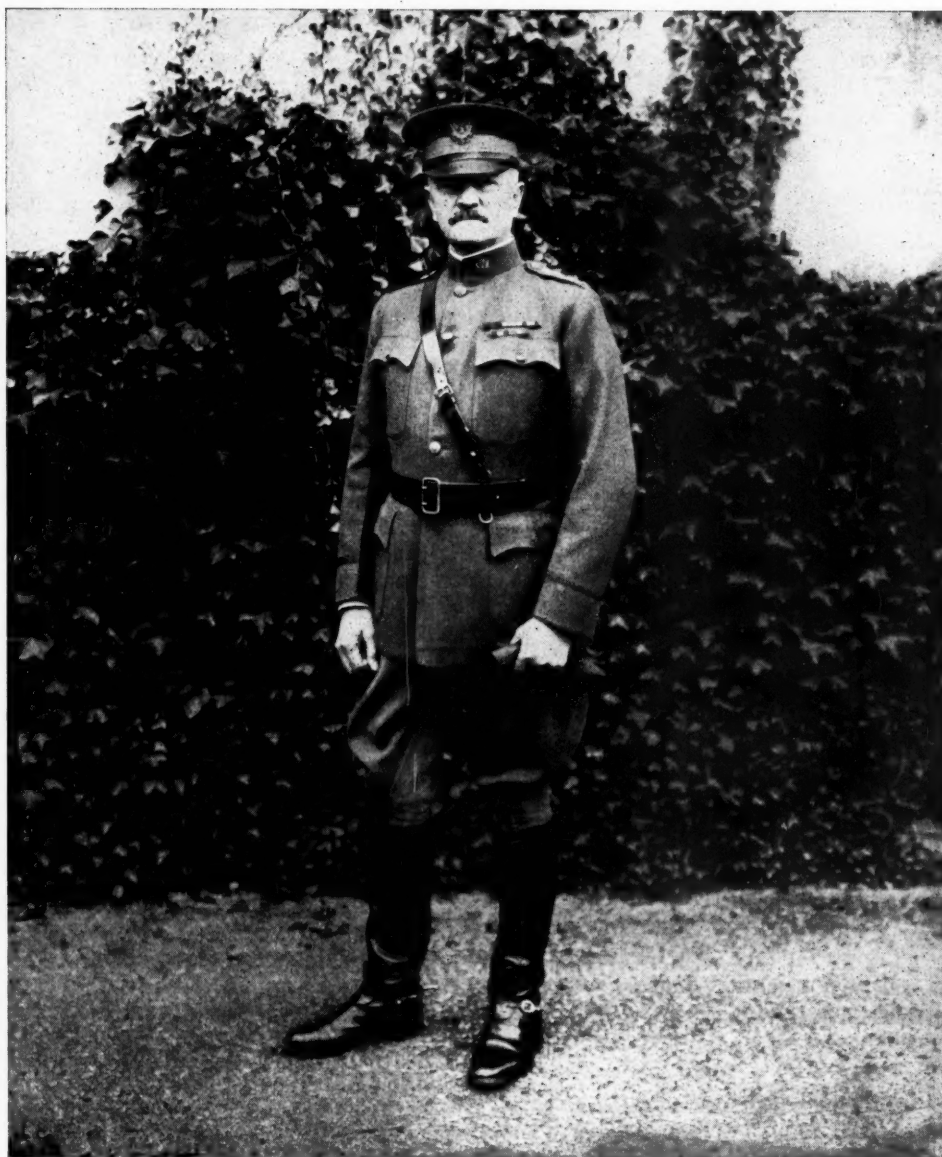


The Cover

The new mobile defenses of Puerto Rico. Battery A, 51st Coast Artillery, in Action at Punta Salinas.

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USA Signal Corps.

General Pershing and his Headquarters in France

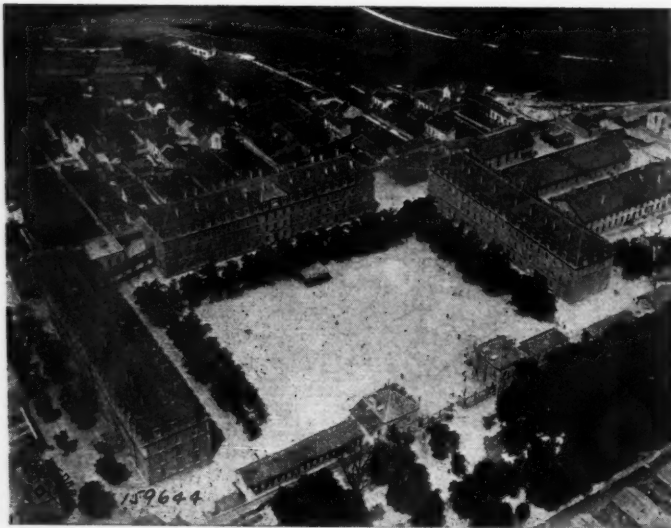
BY MAJOR GENERAL H. B. FISKE, *U. S. Army, Retired*

Recent events on the European continent may perhaps lend interest to this story of General Pershing and his headquarters in France during the World War and it may also throw new light upon the splendid body of men he commanded.

In June 1917, General Pershing, as commander in chief, accompanied by the nucleus of a staff, went via England to France. General Headquarters was at first established in Paris. Since its first duty was the preparation of basic plans for the organization of the troops which were to follow and for their

shelter, supply, training, and ultimate use against the enemy, it was a great convenience to locate our general headquarters in Paris near the French War Ministry whence came most of the information upon which these plans had to be based. But when these broad and fundamental plans had been outlined and a probable sector of the front had been selected for ultimate occupation by the American forces, a location for the headquarters became desirable somewhere behind the center of that sector, away from the enticing diversions of Paris, not so accessible to

visiting dignitaries, somewhat removed from the French authorities who early manifested a desire to control every American action, and in some city where adequate office and billeting space for the rapidly expanding sections and departments of the headquarters could be more easily obtained. After reconnaissance and consideration of several suggested cities, Chaumont was selected and headquarters moved there about 1 September 1917.



USA Signal Corps.

VIEW OF GENERAL HEADQUARTERS AT CHAUMONT

At first the headquarters was organized into the three general staff sections and the several administrative and technical staffs then contemplated by our Field Service Regulations. But because of the necessity for the utmost possible rapidity of action it was quickly determined to confine the sections of the General Staff within narrower limits of duty and therefore to have more sections. As early reorganized and continued to the end, the general staff was divided into five sections whose broad functions were: The First Section for administration, welfare and handling of personnel; the Second Section for intelligence of the enemy, espionage and counter-espionage; the Third Section for the organization of troops and for operations against the enemy; the Fourth Section for supply and construction of all kinds; and the Fifth Section for the schooling of officers and training of troops.

Soon after reaching Chaumont it was realized that the total staff was becoming too large and unwieldy; that too many people expected to deal directly with the commander in chief or the chief of staff to make it possible for them to handle the mass of business with the prompt decision and rapid action demanded by the war situation. Decentralization of functions and a smaller staff with the commander in chief had become a necessity. Accordingly, within a few months after the headquarters had been established at Chaumont the drastic step was taken of sending back all of the technical and supply departments from the general headquarters to Tours to report to and to be subordinate to the commanding general of the Service of Supply, the S. O. S. There remained at Chaumont, the General Staff, the order section of the Adjutant General's Office, the Inspector General and the Judge Advocate General. To the S. O. S. went the greater part of the Adjutant General's office, the chiefs of the Quartermaster, Ordnance, Signal, Medical, Engineer, Chemical War-

fare and Air Services. This radical departure from the customary Army organization at first aroused considerable opposition by these services as tending to reduce their influence and authority, but I believe it was finally accepted by all as the best possible solution of the problem, for I never heard anyone suggest, after the scheme had been in operation for a few months, that return to the old organization was desirable.

In solving the many pressing problems and in securing action thereon, heads of general staff sections were given wide latitude and were authorized to issue orders in the name of the commander in chief. How far each could go in taking action in a particular case without the personal approval of the General or of his chief of staff depended on the judgment of the individual staff officer as to whether the matter was of such importance that the General would want to handle it himself or was so in line with previously determined policy that the staff officer could feel reasonably sure of the General's concurrence in the proposed action without submission. But the one man the General could not have about him was the man afraid of responsibility and who had to have an O. K. on every proposal. Initiative and decision were promoted and urged. But information of action taken was also essential. For this, the Chief of Staff assembled each day the heads of the general staff sections, the Adjutant General and the Inspector General for a concise oral report of the previous twenty-four hours work of each office. The whole staff was thus oriented on the entire business of the headquarters, and such instructions as were necessary were then issued at this conference for the next day.

All work at the headquarters was done in the most informal and expeditious manner. There was almost no time-consuming passing of formal memoranda from section to section for concurrence as is the practice in many of our headquarters; but there was constant visiting from section to section for brief, informal talks and conferences by which necessary consideration and concurrences on all but the gravest matters were usually obtained in a few minutes.

Matters of broad policy and the great problems which required the decision of General Pershing had to receive exhaustive preparation and consideration. He insisted upon full information about every important phase of each problem, immediately recognized the controlling elements, carefully considered every possible line of action, and then promptly and with unfailing good judgment decided upon his procedure.

Almost all the senior officers of the general staff were fairly recent graduates of the Leavenworth Army Schools or of the War College or of both. They spoke therefore a common language based upon the same background of knowledge and experience; they attacked their problems in a somewhat uniform way, and their reasoning usually followed the same general lines. In addition, most of them were friends of long standing. All these factors worked towards a fine cooperation and teamplay. As a result, I have never seen anywhere else anything comparable to the speed, certainty and smooth efficiency with which this headquarters functioned and handled its perfectly enormous business.

The problems requiring solution by the headquarters were many and most pressing. Not only was an army, or armies, to be organized and fought against an enemy whose efficient armies stood out in a continent of nations vastly superior to their own in total numbers; but the American divisions had to be transported, supplied and fed in a foreign country whose language



GENERAL STAFF OF THE AMERICAN EXPEDITIONARY FORCES, 1 NOVEMBER, 1918

USA Signal Corps.

(Reading from left to right) *Front row*: General Fiske, G-5; General McAndrew, Chief of Staff; General Pershing; General Conner, G-3; General Moseley, G-4.

Back row: General Andrews, G-1; General Eltinge, Deputy Chief of Staff; General Nolan, G-2; General Davis, Adjutant General.

was unfamiliar and whose business and working customs were very different from our own, although the natives were proud and jealous and certain that these could not be improved upon; and all had to be accomplished thousands of miles from our base of supplies at home. While long cablegrams were exchanged daily with the War Department in Washington, to obtain a meeting of minds at this great distance at times seemed almost impossible. Moreover, the studies and decisions in France not only guided the expeditionary force in that country but constituted the foundation for all organization and preparation at home.

In this paper I can attempt nothing more than a glance at a few of the vexatious and controversial problems which came under my personal observation but which well illustrate the quality of the man, General Pershing, who decided their solution. From 1 August 1917, I was a member of the Training Section of the General Staff at first under Colonel (later Major General) Malone. In February 1918, when Colonel Malone went to command the 23d Infantry, I succeeded him as head of the Training Section.

In the solution of our problems, the American headquarters had the interested and valuable assistance of the French and the British. Both were glad to tell us of their experiences, of their difficulties and of the manner in which they had met them. They turned over to us their confidential training and tactical manuals; threw open their technical schools to details of our officers and noncommissioned officers; and furnished us great numbers of officer and noncommissioned officer instructors to assist in our schools and in the training of our divisions. In the early stages of the work in France this assistance was invaluable.

But when the American organization became strong enough to stand by itself, our association with the French and British ceased to be a help and became a hindrance because of several fundamental differences of opinion as to how the war should be conducted and as to how our troops should be trained. Our Allies believed that in many respects we were ignoring their experience and were training in directions which would impede the production of suitable troops. Naturally, therefore, they tried to divert our practice in the direction of their convictions, and they were persistent in their efforts to do so.

The most serious difficulty came from the strenuous and determined efforts of the British and the French, acting independently of each other, to secure first the incorporation of American individuals in French and British divisions, and, when it became clear that this idea of obtaining American drafts for foreign commands had no chance of success, then to secure at least the incorporation of American companies or battalions in Allied divisions. This proposal was first made by the Joffre mission in Washington before Pershing sailed for France. In France, Generals Foch, Pétain and Haig, at different times and in different ways urged it upon Pershing, as did the Prime Ministers, Lloyd George and Clemenceau. When they could not budge Pershing, the premiers through Colonel House, then through their embassies in Washington and finally through special envoys, worked directly on the President and the Secretary of War to the same purpose. The Allied Missions at the American headquarters were continually renewing the proposition, and all of these presented the same idea to General Bliss and the Supreme War Council. And the effort continued to the day of the Armistice.

Their main argument usually was: that the divisions of both Allied armies possessed thoroughly trained and war experienced commanders, staffs, and artillery, but were running so low in their infantry that, failing American infantry replacements, many of these veteran divisions must be broken up; that since all of the Allied and associated powers had only one object in view, that of winning the war, the natural and logical thing to do was to pool all resources by combining the quickly trained American individuals or small units of infantry in the Allied war-seasoned divisions; and further, that the growing menace of the great German offensive of 1918 did not give time for the slower process of training American large units, divisions and army corps, to take their places in an American army. Their argument was specious. It appealed to many Americans at that time and I think still does to some.

But the fact is the war could not have been won in this way. We may perhaps disregard the question of the legal or moral right of any American Government to draft Americans for service under the French or the British flag, and the unwillingness of many Americans to take orders from any but American officers. Possibly a way out of the serious legal and political difficulties of the control and discipline of our men under Allied flags and officers might have been found. It might also have been that the proper national pride of our great people could have been persuaded to accept this subordinate and humiliating representation on the Western Front. Still, even so, it must be repeated that the war could not have been won by submerging our fine soldiers in war-weary Allied divisions. For the fact is that by the time of the appearance of our troops in France the Allied troops had largely lost their aggressive spirit as the result of their enormous losses. The dispersion of small groups of our aggressive men among their discouraged troops would not have brought about any very great elevation of Allied morale and would certainly have lowered our own. But winning the war depended first of all on depressing the enemy morale; and the Germans could not have been convinced, and were not convinced that they had lost the war, until a homogeneous American army, fighting successfully under American command in the brilliant and decisive offensives of St. Mihiel and the Argonne, gave a demonstration of the power and might of their new enemy, the United States, which could be interpreted by them as nothing less than the end of their hopes.

Between the summers of 1917 and 1918 both French and British really abandoned the idea of a great offensive which should smash the German lines and bring about a decisive victory. Their hope seemed only by defensive action to tire out the Germans and to obtain some sort of negotiated peace. Such a stalemate the American headquarters declined to accept and therefore declined to agree with the Allied desire that our troops should train only for trench warfare and chiefly for the defensive. As late as 1 May 1918, in a secret memorandum to French officers on duty with American divisions, General Pétain, the French commander in chief, sarcastically said: "The Americans still dream of a breakthrough and of open warfare on the other side." Notwithstanding this attitude of our Allies, General Pershing from the beginning insisted that the training of our divisions should be primarily in the attack and the offensive, and much of that training in the rapidly changing incidents of so-called open warfare. He intended to break the German lines; and when they were broken he intended that our divisions should know how to take full advantage of the fleeting opportunities to be expected on the other side.

Towards the end of 1917, Allied attacks were only on narrow fronts, with limited objectives and usually only for the improvement of some local situation. But the American headquarters had little use for, or belief in such limited attacks, and on the contrary thought only of a great and unlimited advance on all fronts, and believed such to be possible. The event proved the correctness of the American view. The German lines ultimately were broken by great and unlimited attacks, and our divisions did profit on the other side of the German trenches by their knowledge of warfare in the open to destroy the German divisions beyond.

We disagreed also with our Allies as to the value of the rifle. Both French and British said that we spent entirely too much time training our infantry to accurate shooting, particularly at ranges beyond three hundred yards which they said were never used in trench warfare. But traditionally the American is a rifleman; he likes the weapon and takes naturally to training in its use; and his confidence in it adds greatly to the courage and resolute self-reliance of the individual infantryman. This American characteristic constituted a great asset which we believed should be exploited to the full. Again the event proved the correctness of the American view and the deadly effectiveness of the rifle in the hands of men who could use it at all ranges. For the rifles of the American Second Division, practically without assistance from other arms, blocked the great German breakthrough towards Paris at the end of May, 1918, a breakthrough which, if continued, would have won the war for Germany; American rifles of other divisions later stopped the German drive south of the Marne; and American rifles all through the Argonne were the decisive weapon of attack.

Still another fundamental difference of doctrine was the question of the paramount arm. French doctrine made of the infantry only an arm to clean up and hold ground from which a powerful artillery had blasted the enemy. The American headquarters did not believe that decisive results could be obtained by this necessarily slow and cautious advance with an infantry always tied back to its artillery; it insisted that great results could only be obtained by basing the attack upon a self-reliant infantry as the controlling arm, trained it is true, to work in close cooperation with its artillery as long as the artillery could keep up, but when artillery support could no longer keep up, trained then to rely on its own weapons and to drive on. And

the day came when our infantry, driving far ahead of its artillery towards Sedan, promptly overrunning the German defenses wherever encountered, convinced them that further resistance was useless and ended the war.

For some three months after the Armistice our troops went through a program of intensive training which was bitterly criticized at the time and has been by many ever since. But it must be remembered that the political situation was decidedly uncertain. The Armistice was not necessarily a prelude to peace. It was essential therefore that the negotiations of our Government with the enemy governments should have the physical backing of a strong and efficient body of troops. Most of our divisions had suffered severely by influenza and battle casualties in the last great attacks before the Armistice and these divisions had to be refilled with replacements and then, to be efficient, had to be retrained. There resulted a period of intensive training which was most irksome at the time to many but which gave us again a splendid body of troops — troops that in my opinion for a long time were the only thoroughly dependable ones in Europe. And this fact undoubtedly had an incalculable effect in securing German signature to the harsh terms of the Treaty of Versailles. Possibly, if full advantage of the presence of these splendid troops had been taken our Government might have secured from all belligerents a better and more durable peace in agreement with the fourteen points upon which the Armistice had been based.

The comment of foreign officers from all sides on this training was that their troops could never have been brought to do the work. But ours did it; and it is to their everlasting credit that the independent, individualistic young American remained hard at work, under discipline and control and with excellent behavior at a time when most natural instincts were urging toward relaxation, license and disorder.

The American First Army was constituted 10 August 1918. From then to 12 October, that is during the St. Mihiel offensive and a great part of the Meuse Argonne, General Pershing served in a dual capacity as the immediate commander of the First Army and as the commander in chief of the whole Expeditionary Force. When the Second Army was formed in October and placed under General Bullard, General Pershing relinquished the First Army to General Liggett, and from then on commanded the group of American armies and the entire Expeditionary Force. His staff for the First Army was entirely separate from his staff for the Expeditionary Force.

The American Expeditionary Force had two splendid chiefs of staff, in succession General Harbord, then General McAndrew, and then again at the last General Harbord. In May 1918, General Harbord claimed from General Pershing fulfillment of a promise for troop duty and went to command the Marine Brigade of the Second Division, then the Second Division and finally the S. O. S. In 1919, when General McAndrew went home to reopen the War College, General Harbord returned to G. H. Q. Both were men of the highest intelligence, military education and character, and both by their energy, tact and fair dealing were most eminently qualified to head a great staff and to transform the decisions of the commander in chief into action. They made ideal chiefs of staff. But neither of them commanded the Expeditionary Forces. There never was any doubt in anyone's mind over there that Pershing was the dominating and controlling personality. No one could claim in his case, as many have claimed of the great German pair, Hindenberg and Ludendorff, that the junior made the decisions.

The American effort in the World War went far beyond the estimates either of our enemy or of our Allies as to what might be done. The actual accomplishments were truly magnificent and in many ways without parallel in the annals of war.

One man was responsible for the achievements in France and, by his advice and recommendations, for much that was accomplished at home. It must be remembered that General Pershing commanded two million men on foreign soil — three thousand miles from home; that he provided them with a new and unprecedented organization; that his disbursements of money, without taint of scandal, must literally be measured in billions of dollars; that his enormous railway terminals, port facilities, supply depots, hospitals, and great business installations of almost every kind practically covered France; that in the face of opposing Allied opinion he correctly appreciated the strategy and tactics that could alone defeat the enemy; that he trained his troops in these tactics despite stubborn opposition; that he resisted the fatal proposal to incorporate Americans in Allied units, and that he maintained his decisions and position in this matter and his determination that an American Army must be created, despite the opposition of the astute politicians then controlling these Allied governments; and that finally he personally commanded and successfully led against a splendid enemy the greatest armies ever intrusted to an American commander.

The very magnitude of his operations at first hindered a proper appreciation of his accomplishments by his own soldiers and by the general public. The great soldiers of our past commanded relatively few men. Stonewall Jackson's great deeds were done with from three thousand to thirty thousand men; Lee and Johnston seldom had more than sixty thousand; Grant and Sherman seldom more than a hundred thousand each. In these comparatively small bodies their general could be seen by, and known to, relatively large numbers. But General Pershing personally directed 600,000 men in his army of St. Mihiel and more than a million in his army of the Meuse-Argonne. He was frequently far to the front, but in these masses of men comparatively few could even know of his presence. As time passes, however, I believe that the men he commanded and the American people are seeing the grandeur of his accomplishments in ever truer perspective and that they are placing him securely in history as a great administrator, a great diplomat, a great tactician, and altogether in the superb quality of his character and the breadth and splendor of his attainments, as a soldier of heroic stature.



USA Signal Corps.
AMERICAN ARTILLERY FIRING ON THE ENEMY WITH A 340-MM GUN,
26 SEPT., 1918



MILITARY NEWS

around the

WORLD

BY MAJOR WM. H. SPEIDEL, *Infantry*



CALENDAR OF THE WAR

1939

- 1 Sept.—Germany invades Poland. Danzig is added to the German Reich.
- 3 Sept.—Great Britain and France declare war on Germany.
- 17 Sept.—Russia invades Poland.
- 27 Sept.—Warsaw surrenders.
- 28 Sept.—Modlin capitulates to German troops. Polish War ends.
- 5 Oct.—Soviet-Latvian Pact signed in Moscow.
- 10 Oct.—Lithuania and Estonia yield naval and air bases to Russia.
- 19 Oct.—Turkey signs military alliance with Great Britain and France.
- 14 Nov.—20,000 Soviet troops occupy Lithuania.
- 18 Nov.—Allied merchant marine placed under British command.
- 30 Nov.—Russia invades Finland.
- 17 Dec.—*Graf Spee* is scuttled by her crew off Montevideo, Uruguay.

1940

- 12 Feb.—Russia and Germany sign trade treaty.
- 1 Mar.—Rumania increases her Army to 1,600,000.
- 13 Mar.—Russia and Finland sign peace treaty in Moscow.
- 9 Apr.—Germany occupies Denmark and invades Norway.
- 3 May—Allies abandon all of Norway, except Narvik.
- 10 May—Germany invades the Netherlands, Belgium and Luxemburg. Chamberlain resigns. Churchill appointed Prime Minister.
- 14 May—The Netherlands capitulates. German troops capture Sedan.
- 17 May—Germans drive salient into France as far as Rethel. German Army enters Brussels.
- 18 May—German troops enter Antwerp. Zeeland resistance ends. Marshal Petain appointed Vice-Premier.
- 19 May—General Weygand succeeds General Gamelin as Generalissimo of Allied Forces. Germans drive wedge to Landrecies. Germany annexes Eupen, Malmedy and Moresnet (Belgium).
- 20 May—Germans take St. Quentin.
- 21 May—Germans penetrate to Abbeville and capture Amiens and Arras. General Giraud, commanding 9th Army, and staff captured.
- 22 May—Rumania increases Army to 2,000,000.
- 23 May—Germans retake Abbeville and drive thrust toward Boulogne.
- 24 May—Germans occupy St. Omer.
- 26 May—General Weygand dismisses fifteen generals held responsible for French rout from Meuse Front.
- 27 May—Germans take Boulogne and Calais. Lt. General Sir John Greer Dill, 58, named Commander of the British Imperial General Staff, replacing General Sir Edmund Ironside, 60, who is given command of the Home Front.
- 28 May—King Leopold orders the Belgian Army to surrender.
- 29 May—London reports capture of Narvik, Norway, by Allied Force. Germans take Ostend and Lille.
- 30 May—British and French conduct retreat from Flanders on large scale.
- 31 May—Allies retake Abbeville.
- 2 June—German planes bomb southern France in vicinity of Lyon and Marseilles. Germans bomb Paris from the air.
- 4 June—Germans take Dunkerque and 40,000 prisoners. Battle of Flanders and Artois ends.
- 9 June—British and French abandon Narvik. Norway surrenders to Germany.
- 10 June—Italy declares war against France and England.
- 11 June—French Government moves to Tours. Germans cross the lower Seine.
- 14 June—Germans enter Paris, LeHavre and Montmedy. Spain occupies the international zone of Tangier.
- 15 June—Germans capture Verdun. French capital moves to Bordeaux. Russia occupies Lithuania.
- 16 June—Reynaud cabinet resigns. Marshal Petain named Premier of France. French troops abandon the Maginot Line.
- 17 June—France asks peace terms. Russia invades Latvia and Estonia.
- 18 June—Hitler and Mussolini meet at Munich to negotiate French peace terms.
- 21 June—Peace terms handed to French envoys at Compiègne by Hitler.
- 22 June—France signs armistice with Germany.
- 24 June—France signs armistice with Italy.
- 25 June—War in France ends 1:35 AM, Western European Time.
- 26 June—Russia serves ultimatum on Rumania demanding Bessarabia and Northern Bucovina.
- 27 June—German troops reach the Spanish border.
- 28 June—Rumania cedes Bessarabia and Northern Bucovina to Russia and moves troops to prevent Hungarian action against Transylvania. Russia initiates occupation of the ceded provinces.

Hungary and Bulgaria call out reserves. Turkey rushes fleet to defend the Dardanelles.

- 30 June—Russia seizes Reni (Rumania) at the juncture of the Danube and Prut Rivers.
- 1 July—Germany occupies the British Islands of Guernsey and Jersey.
- 4 July—Rumania orders British oil men to leave and forms new pro-German cabinet. Britain starts operations in the Mediterranean resulting in destruction and capture of the French Fleet.
- 5 July—The Petain Government severs relations with Britain.
- 7 July—Russia pours additional armored divisions into Bessarabia and Northern Bucovina.
- 10 July—German planes stage large bombing raid over Wales. British and Italian fleets clash in the Mediterranean.
- 11 July—The Irish Republic rejects joint defense with Northern Ireland. Hungary drops campaign for immediate return of Transylvania from Rumania and announces adherence to Axis Powers.
- 12 July—Marshal Petain assumes functions as chief of authoritarian state.
- 18 July—German troops land on the French island of Ouessant off the coast of Brittany, 120 miles south of Land's End.
- 21 July—Latvia, Lithuania and Estonia vote for admission to the Soviet Union.
- 22 July—Britain rejects German peace offer.

BALTIC STATES—LATVIA, LITHUANIA, ESTONIA AND FINLAND

Soviet Russia invaded Lithuania 15 June 1940, and Latvia and Estonia 17 June 1940, charging that the three countries had violated their mutual assistance pact with the U.S.S.R. by concluding a military alliance, which Russia considered as "profoundly dangerous and menacing" to the security of the Soviet Union.

Shortly after the arrival of the Russians, and following consultation with the Soviet authorities, so-called "people's" governments were established in the three Baltic Republics. On 21 July 1940 the parliaments of the three republics, in the presence of Russian functionaries, voted to join the Soviet Union.

The combined population of Latvia, Lithuania and Estonia is about 5,500,000, distributed as follows—Latvia 1,900,000; Lithuania 2,500,000; and Estonia 1,100,000. Together they cover an area of 65,243 square miles.

On 22 July 1940 the Parliaments of Latvia, Lithuania and Estonia enacted legislation dividing three million acres of former estates into 60-acre farms in accord with the newly-adopted plans for state control of property, industry and banks. A commissariat was appointed to control the banks of the three countries.

(Foreign Press)

Latvia

Having been conceded the ports of Libau and Windau

and the right to set up aerial and naval bases, Russia also obtained the right to set up coastal defense batteries for the Gulf of Riga on the coast north of Windau between Libau and Windau. In addition she secured free exercise of the railroad Ostrov-Riejutsa-Libau and the right to construct barracks for 25,000 men at Libau. At Libau, the only aircraft factories existing in Latvia had to be set up elsewhere on account of the Russian occupation.

(Rivista Marittima, April 1940)

Lithuania

New Port: Having ceded the port of Memel to Germany, the government has decided to transform the fishing village of Shventai into a modern port for ocean-going vessels. This new port, located about thirteen miles from Memel between Polangen and Schwentonja, will be named Swieta.

(Rivista Marittima, April 1940)

Estonia

The Estonian Navy: Estonia's naval program is planned particularly for coastal defense purposes and will consist of destroyers, mine layers and submarines—types of craft which were totally lacking in the Estonian Navy.

The Vickers-Armstrong shipyards have constructed for Estonia two submarines, *Kalou* and *Lembit*, good ships of 620 tons and 815 tons, respectively; speed 13.5 knots and 8.5 knots, respectively; four torpedo tubes; 20-mm machine guns, 20 torpedoes, cruising radius of 2,000 miles at ten knots.

At Finnish shipyards, Estonia ordered three submarines of 250 tons each.

At the Tallin shipyards there are being constructed four destroyers to replace the mine layers *Lennuk* (ex-Russian), *Solev* (ex-German), *Kalev* (ex-Russian), and the *Olav* (ex-Russian). The latter is still being retained in service for instruction purposes. In addition to the ships mentioned above the Estonian Navy has a torpedo boat constructed in 1916 of 228 tons, 26 knots, with two torpedo tubes.

In 1938 Estonia had a merchant marine consisting of 176,677 tons.

(Rivista Marittima, April 1940)

Finland

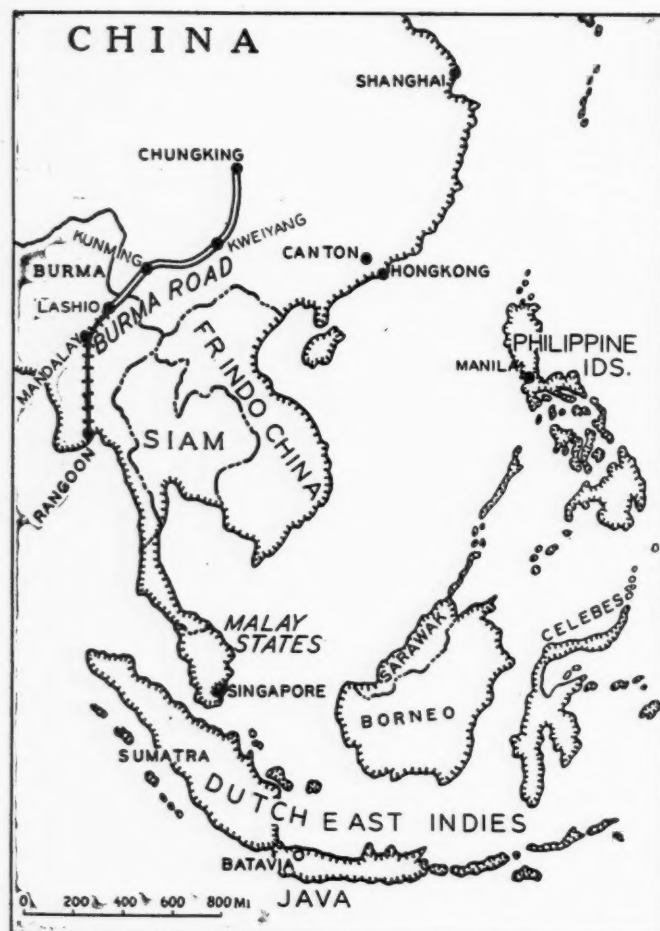
Antiaircraft activity in the Russo-Finnish War: It has been estimated that the total number of Soviet aircraft brought down by Finnish antiaircraft artillery during the war amounted to 275—50 in December, 60 in January, more than 100 in February, and about 50 during the remaining period of hostilities. The average number of rounds fired for each aircraft destroyed was 54. The interesting point about these figures may be realized when one considers that at the beginning and end of the Great War, 1914-18, the average number of rounds required to bring down a single aircraft was 11,000 and 6,000 respectively. One battery alone is reported to have brought down more than 30 Soviet aircraft.

(Le Vie dell'Aria, 6 April 1940)

CHINA

Great Britain closes the Burma Road: On 17 July 1940 the Japanese Foreign Office announced that it had come to a definite understanding with Great Britain that the Burma Road, running from Rangoon in British Burma to the capital of the Central Chinese Government at Chungking, would be definitely closed. The agreement took effect on the following day. It bans the movement of gasoline, trucks, railway equipment and "other materials" via the Burma Road over a period of three months, after which new arrangements will be made.

(Foreign Press)



THE BURMA ROAD

FRANCE

The French Navy: Excluding obsolete vessels, the French warships in commission at the outbreak of the war in September 1939 included:

- 5 capital ships (modern or reconstructed)
- 51 cruisers consisting of:
 - 7 "heavy" (10,000 tons, 8-inch guns)
 - 12 "medium" (6,000 to 8,000 tons, 6-inch guns)
 - 32 "light" (with a 3,000 to 3,500 tons full load displacement and 5.5-inch guns)
- 38 destroyers

- 77 submarines
- 2 aircraft and seaplane carriers
- 37 escort vessels and mine-sweeping avisos
- An important fleet of auxiliary vessels (oilers, survey ships, etc.).

The French battle-cruisers *Dunkerque* and *Strasbourg*, listed under *capital ships*, were the only French battleships of really modern construction. The *Dunkerque* was commissioned in 1937 and the *Strasbourg* in 1939. The four capital ships of the *Richelieu* class were in the process of construction.

The latest French light cruisers compared favorably with foreign contemporaries. The six of the *La Galissoniere* type were fast, well protected vessels with excellent sea-keeping qualities, while the *Volta* type (2 complete and 4 under construction) consisted of light cruisers which were the most formidable of their kind; under deep load their speed was well over 37 knots. It may be noted also that the French submarine flotilla was the most homogeneous in the world. It consisted mainly, of thirty-eight first class submarines and thirty-eight second class submarines.

An interesting feature of the French Navy was that it had its own Naval Air Force. Over and above the sixty aircraft carried in various battleships and cruisers fitted with catapults and the flights carried by the aircraft carriers and seaplane tenders, two wings, respectively of five and seven flights (patrol, scouting, bombing and torpedo aircraft), were at the disposal of the Commander in Chief of the Atlantic and Mediterranean battle fleets.

(Journal of the Royal United Service Institution, May 1940)

It is the above-mentioned navy that, for the most part, has either been destroyed, or captured, as a result of recent operations conducted by the British Navy.

GERMANY

Germany's Principals in the Campaign Against Britain:

Chief of Supreme Command General Field Marshal William Keitel. Inventor of the *Schnelle Truppen* (force of great mobility).

Chief of the German General Staff Colonel General Franz Halder. Artillery specialist.

Commander in Chief of the German Army General Field Marshal Walter von Brauchitsch. Sponsor of the German-Soviet Pact.

General Field Marshal Walter von Reichenau.

General Field Marshal Feodor von Bock. Commanded the Austrian occupation.

General Field Marshal Gunther von Kluge.

General Field Marshal Karl von Rundstedt.

General Field Marshal Hugo Sperrle. Commanded the Condor Legion in Spain.

General Erhard Milch. Directed the air campaign in Norway.

General Ernst Udet. Organizer of the parachute army.

General Maximilian von Weichs. Commanded the 13th Corps.

(Foreign Press)

Uniform and equipment of German parachutists:

High boots, laced at the side, with heavy rubber soles.
Loose grey trousers, falling over the top of the boot.

Grey tunic with brown or yellow piping on collar which bears the unit number formed by small conventionalized eagles in white metal. The shoulder straps are piped and the pockets have buttoned flaps.

Over the tunic and trousers is always worn a grey-green gabardine combination, loose in the body, with short legs and full, long sleeves, fastened down the front with zippers. The breast pocket is also fastened with zippers. The collar is loose and is often worn open exposing the insignia. On the right breast is an embroidered white badge. For the descent, the combination is worn over the equipment. On landing, the parachute harness is discarded, and the belt with its attachments is taken off and put on again outside the gabardine combination.

Gauntlet gloves constricted at the wrist.

A steel helmet with no rim in front or behind, secured by two straps passing one behind and one in front of the ears. On the side of the helmet is the flying badge. The helmet may be sand-camouflaged.

Pistol ammunition is carried in pouches attached to the belt, or in the pocket. Rifle ammunition is in twenty clips of five rounds each, in bandoleers slung round the neck. Cartridge clips for machine pistols (six clips of thirty rounds each) are carried in the haversack or in two pouches joined by a strap which is slung round the neck. Machine-gun cartridges are carried in a belt slung over the shoulder. The belt is made of leather and supported by a brace, two straps in front fastened to a ring, and a single strap at the back. To the belt are attached a pistol, two haversacks, a water bottle and a gas mask. A rolled bivouac cape is hung from the shoulders above the belt, at the back. Field glasses are carried by the machine-gun squads. Rations may be carried in the legs of the baggy trousers. One man in five has a machine pistol with a folding metal stock, a device enabling it to be used as a rifle.

During the jump the man carries very little, the weapons being dropped separately in wooden or metal containers, cylindrical or six-sided in shape and opening along the length. Three or four of these are carried in each plane and dropped singly, attached to a parachute, one container to about every five men. The rifles are loaded for instant use. From the containers the parachutist may obtain rifles, stick grenades, antitank rifles and machine guns.

(The Illustrated London News, 8 June 1940)

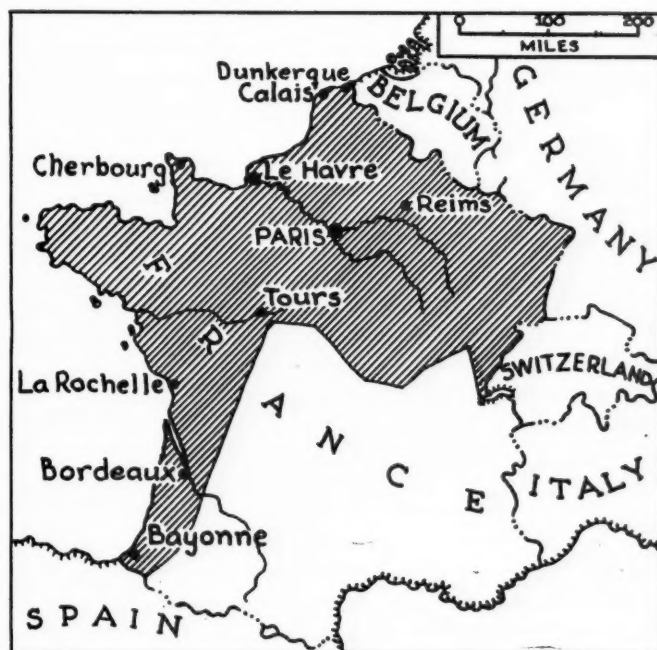
Major General von Schell, Under-Secretary of State:
As captain of infantry, von Schell spent a year in the United States observing the training methods of the United States Army. Returning to Germany, he served for a time with a motorized unit and then attended the *Kriegsakademie* as a student for three years. In the meantime he had been promoted to the rank of major. Following his graduation he was appointed to the General Staff where he made a special study of the motorization of the German Army. In this capacity he rose to the rank of colonel. In 1938 he was appointed Chief Inspector of all armored and motorized units in the German Army. On 1 January 1940 he was promoted

to the rank of major general and appointed an under-secretary of state in charge of the nation's transportation.

(Die Panzertruppe, May 1940)

Principal Points of the Franco-German Armistice Terms:

1. Cessation of fighting against Germany in France, in all French possessions and on the seas.
2. The shaded portion indicated on the map to be occupied by German troops, the occupation to be supported by the French administration.
3. The German Government to limit occupation of the west coast, after ending hostilities with England, to the extent absolutely necessary.
4. The French Government to be permitted to select the seat of its government in unoccupied territory, or in Paris, in which case the German Government agrees to guarantee its support in conducting the administration of unoccupied territory from Paris.
5. Demobilization and disarming of all land, sea and air forces, except those which are necessary for the maintenance of domestic order, the strength to be fixed by agreement with Germany and Italy.
6. To be prepared to surrender to the German Government, undamaged, all guns, tanks, tank defense weapons, warplanes, anti-aircraft artillery, infantry weapons, means of conveyance and munitions from all French units opposing Germany and which at the time this armistice goes into force are in territory not to be occupied by Germany.
7. Weapons, munitions, and war apparatus of every kind remaining in the unoccupied portion of France to be stored and/or secured under German and/or Italian control, except those required for the arming allowed to French units.
8. Building of new war apparatus in occupied territory to be stopped immediately.



FRENCH TERRITORY OCCUPIED BY GERMAN TROOPS

9. All land and coastal fortifications, with weapons, munitions and apparatus and plants of every kind to be surrendered undamaged. Plans of these fortifications as well as those already conquered by German troops to be surrendered.

10. The French war fleet to be collected in ports under German and/or Italian control and to demobilize and lay up, with the exception of those units which might be considered necessary for the protection of French interests in its colonial empire.

11. The French Government to be assured that it is not the intention of the German Government to use the French war fleet which is in harbors under German control for its purposes in war, with the exception of units considered necessary to guard the coast and to sweep mines, and that no further demands respecting the French fleet will be made at the conclusion of a peace.

12. The French High Command to report the exact location of all mines, harbor and coastal obstructions and defense facilities.

13. The French Government to prevent any of its armed forces, armaments, ships, planes, etc., from falling into the hands of England or to be taken to any other place abroad.

14. All French citizens who continue to fight against Germany in the service of hostile states to be treated by Germany as insurgents.

15. All commercial sea traffic to be discontinued until approval for resumption of commercial voyages is granted by the German and Italian Governments. All commercial vessels which cannot be returned to France to be interned in neutral ports. All confiscated German commercial vessels to be returned to Germany undamaged.

16. All flights by any airplane over French territory without German approval to be regarded as a hostile act. All foreign airplanes in French unoccupied territory to be turned over to the German armed forces.

17. All water and land traffic facilities in occupied territory to be placed at the disposal of the German Government and to be restored by French labor if necessary.

18. The operation of all wireless stations on French soil to be discontinued.

19. The French Government to comply with all German demands relative to the transit of freight traffic between Germany and Italy through unoccupied French territory.

20. The French Government, in agreement with the responsible German officials, to provide for the return of population into occupied territory.

21. The French Government to prevent every transference of economic valuables and provisions from German occupied territory into unoccupied territory or abroad, due consideration to be made by the German Government with respect to the necessities of life required by the population in unoccupied territory.

22. The French Government to bear the cost of maintenance of German troops on French soil.

23. All German war and civil prisoners in French custody to be surrendered to German troops. The French Government to surrender upon demand all Germans named by the German Government.

24. French troops in German prison camps to remain prisoners of war until conclusion of a peace.

25. The French Government to assume full responsibility for all destruction, damage or removal of all property specified in this agreement.

This armistice was signed by representatives of the French and German Governments on June 22, 1940, in the Forest of Compiègne.

(Foreign Press)

GREAT BRITAIN

Leaders of the British Defense System:

Chief of the British Imperial General Staff General Sir John Dill.

Vice Chief of the British Imperial General Staff Lieutenant General Robert Haining.

Commander in Chief of the Home Forces Lieutenant General Alan F. Brooke.

Chief of the General Staff of Home Forces Major General Bernard Paget.

Chief of the British Isles Western Command General Sir Robert Gordon-Finlayson.

Chief of the Western Command Lieutenant General Ronald F. Adam.

Air Chief Marshal Sir Cyril Newall.

Air Marshal Arthur Sheridan Barratt.

Chief of the Fighter Command (Home Defense) Sir Hugh Dowding.

Army Corps Commander Lieutenant General A. G. L. McNaughton.

Admiral of the Fleet Sir Dudley Pound.

(Foreign Press)

Suspension of Air Mail Routes: Italy's entry into the War has meant the temporary suspension of the Empire air routes. The Postmaster-General has announced that the Empire air mail routes have been suspended, the principal countries affected being Malta, Egypt, Palestine, Iraq, India, Ceylon, Burma, Hong Kong, Malaya, Australia, New Zealand, Sudan, East Africa and South Africa.

(The Aeroplane, 21 June 1940)

Australia

Royal Australian Air Force: Since the War began Australia has been concentrating on training, although Avro Ansons of the Coastal Command have been cooperating with the Royal Australian Navy. At the end of July, 1939, the Royal Australian Air Force had a total personnel of 3,394 and an Auxiliary Air Force numbering 283. The R.A.A.F. has been expanded to provide for 3,500 pilots and 16,500 ground staff.

Australia is taking part in the Empire Training Scheme and hopes to turn out 50,000 trained men in the course of three years. Thirty-six new training schools are to be established in the Commonwealth and, though a number of personnel will be sent to Canada for advanced training, Australia should be able to send more units overseas for active service shortly.

Apart from light trainers, the equipment of the R. A. A. F. includes Bristol Bulldogs, Westland Wapitis, Hawker Demons, Avro Ansons, the Australian-built Wirraways,

Supermarine Southamptons and Supermarine Seagulls, besides the American Lockheed Hudsons. In addition, Bristol Beauforts are being built in Australia and more than 500 Avro Ansons and 300 Fairey Battles have been promised by the United Kingdom.

(*The Aeroplane*, 21 June 1940)

Canada

Royal Canadian Air Force: As the center of the Empire Training Scheme, Canada is becoming a huge training ground for the Empire and, when the program is in full swing, expects to turn out about 1,400 fully trained men each month. The main scheme is for the training of Canadian recruits but about one-fifth of the total personnel will come from overseas for advanced training. Pilots will be sent from Great Britain, Australia and New Zealand and later will be attached to squadrons composed of fellow Dominions in the R. A. F.

About sixty schools are being established throughout the Dominion and training aircraft include Avro Ansons, Fairey Battles, de Havilland Tiger Moths, Fleet Trainers, North American Harvards and Noorduyt Norsemen. A number of instructor officers and men of the R. A. F. have been sent to Canada.

The normal peace establishment of the R. C. A. F. is 260 officers and 1,955 men of the permanent Force and 208 officers and 1,014 men of the auxiliary Active Force. This is being expanded to a total of 2,400 officers and 28,000 men.

(*The Aeroplane*, 21 June 1940)

South Africa

Royal South African Air Force: Bombers of the South African Air Force came into action for the first time 11 June 1940, when they raided Italian Moyale on the Kenya-Ethiopian border and bombed Banda Hill and other military objectives without loss to themselves.

This is the first time the South African Air Force has been in action, apart from patrolling the coastline and intercepting German merchant ships.

In common with the other Dominions the Union of South Africa has been expanding its Air Force during the past year. Although it did not join in the Empire training scheme, the Union has made arrangements with the British Government recently for training pilots from Great Britain for the R. A. F. Special training schools are to be started for pilots, observers, photographers and air gunners. Kimberley is expected to become the center of the Training Command.

(*The Aeroplane*, 21 June 1940)

HUNGARY

The Hungarian Army: Until 1934 the Hungarian Government had been able to maintain a small military force under the guise of a national police force. Between 1934 and 1938 seven new regiments were formed under the pretext of controlling smuggling. Finally, in 1938, the Little Entente recognized Hungary's right to rearm.

At the end of 1939 Hungary, a nation of 8,989,000, had an active army of 1817 officers and 35,000 men. A very small

reserve force consisted of those men who had fought in the War of 1914-18 and of those whose voluntary enlistments had expired.

The armed forces were composed of:

- 7 mixed brigades
- 2 cavalry brigades
- 1 independent organization consisting of 5 batteries of artillery and 3 battalions of engineers
- 1 detachment of armored vehicles.

Each brigade was composed of 2 regiments of infantry, 1 battalion of cyclists, 1 squadron of cavalry, 1 battalion of artillery, 1 signal company, 1 supply train and 1 motor transport detachment.

At the end of 1939, Hungary had no air force and no tanks.

(*La France Militaire*)

ITALY

Italy's Air Force: Although nearly forty different types of airplanes are believed to be in service with the Regia Aeronautica, not more than ten types form the backbone of the service: three fighters, three light bombers, three heavy bombers and one float seaplane. There are about half a dozen newer types upon which production is probably beginning and a variety of obsolete designs. Some of the new types, particularly the heavier bombers, are likely to be held up because of the acute shortage of materials in Italy.

The three fighters which now equip the bulk of Italian fighter squadrons are: the Fiat CR.42 biplane (840 h.p. Fiat A74 RC.38 radial motor), the Fiat G.50 monoplane (850 h.p. Fiat A74 RC.38 radial motor) and the Macchi C.200 monoplane (850 h.p. Fiat A74 RC.38 radial motor). The fastest is the C.200 which has top speed of about 313 m.p.h. The G.50 has a maximum speed of 299 m.p.h. at 14,760 feet, while the CR.42 does only 272 m.p.h. All these fighters have a standard armament of only two machine guns each, mounted in the fuselage, where their rate of fire is slowed down by the interrupter gear for their three-blade airscrews.

In the single-motor bomber class, the Italians have the Breda 65, in the same category as the Fairey Battle. The Breda 65 may be used as a two-seater for ground strafing or as a single-seat fighter with four fixed machine guns in the wings. The top speed with an 850 h.p. Fiat radial is only 254 m.p.h. at 16,400 feet.

The Caproni 310 (the Libeccio) built by the Bergamo concern is in the class of the Avro Anson. It is used for reconnaissance, light bombing and general purpose work, chiefly in Abyssinia. The two 450 h.p. Piaggio P.VII radials give it a top speed of 218 m.p.h. at 5,000 feet.

Italy's three chief types of heavy bombers are the Savoia-Marchetti SM.79, the SM.81 and the Fiat BR.20. The Piaggio P.32 is also in service, but not in large numbers.

The SM.79, which has distinguished itself in several long-distance flights and weight-carrying records, is built to the favorite Italian three-motor formula. This has proved curiously efficient, especially combined with the high wing loading made possible by use of Handley Page slots and slotted flaps. The three 770 h.p. Alfa-Romeo 126 RC.34

motors, which are actually Bristol Pegasus built under license, give the bomber a top speed of 270 m.p.h. However, it is poorly armed with three machine guns, one fixed to fire forward above the center airscrew, and two movable machine guns, one on top of the fuselage and one below. The bomb load can be up to 2,750 pounds and the (cruising) range about 1,500 miles.

The SM.81 is curiously enough an earlier version of the SM.79. It differs chiefly in that it has a fixed undercarriage. The three 700 h.p. Piaggio Stella X motors give it a top speed of 211 m.p.h. The bomb load is reputed to be up to 4,400 pounds.

The third of Italy's standard big bombers is the two-motor Fiat BR.20, which has the distinction of being armed with gun turrets in the nose and on top with another gun position below the fuselage. With two 1,000 h.p. Fiat A.80 RC.41 radials, top speed is 268 m.p.h. and range 1,860 miles with a reduced bomb load. Unlike the Savoia bombers, the BR.20 has twin fins and rudders mounted half-way along the tailplane.

The most used seaplane in the Italian Naval Service is the Cant Z.506B, a three-motor twin float seaplane which is entirely built of wood except for the floats. It has three 770 h.p. Alfa-Romeo 126 RC.34 motors which give it a maximum speed of 242 m.p.h. There is a gun turret on top of the fuselage and a gun position at the aft end of a bulge underneath the fuselage to accommodate bombs and bomb-aimer.

(*The Aeroplane*, 28 June 1940)

New Battleship: The 35,000-ton battleship *Littorio* was turned over 7 May 1940 by the builders to the Italian Navy at Genoa. A week prior to that date a sister-ship, the *Vittorio Veneto*, was turned over, so that the Italian Navy has now been strengthened by an additional 70,000 tons.

The construction of two other 35,000-ton battleships, the *Impero* and *Roma*, is being rapidly pushed ahead, and these ships are expected to be ready for service in the near future. They are understood to be similar to the *Littorio* and *Vittorio Veneto*, which have a speed exceeding 30 knots and carry nine 15-inch and twelve 6-inch guns.

(*U.S. Naval Institute Proceedings*, July 1940)

Principal Points of the Franco-Italian Armistice Terms:

1. France to cease hostilities on all French territory, in the air and on the sea.
2. Italian troops to stand on their advanced lines in all theaters of operations for the duration of the armistice.
3. Areas to be demilitarized as shown on the map. All demilitarized areas to continue as such for the duration of the armistice, except the French Somaliland coast. The latter to be entirely demilitarized for the duration of hostilities between Italy and the British Empire and for the duration of the armistice.
4. Italy to have full and constant right to use the port of Djibouti with all its equipment, together with the French section of the Djibouti-Addis Ababa railway, for all kinds of transport.
5. All arms, supplies and ammunition in the zones to be demilitarized in French metropolitan territory and territory adjoining Libya, together with the arms surrendered to the troops effecting the evacuation of the territories concerned, to be removed within fifteen days.

6. Fixed armaments and the accompanying ammunition to be rendered useless in the coastal territory of French Somaliland. All movable arms and ammunition to be laid down within fifteen days in places to be indicated by the Italian armistice commission.

7. The maritime military fortified areas and naval bases of Toulon, Bizerta, Ajaccio and Oran to be demilitarized within fifteen days, and to remain so until the cessation of hostilities between Italy and the British Empire.

8. All armed land, sea and air forces in metropolitan France to be demobilized and disarmed within a specified period to be fixed later, except such formations as are necessary to maintain internal order. Their strength to be determined by Italy and Germany. In the case of French North Africa, Syria and the coast of French Somaliland, the importance of maintaining internal order will be taken into consideration.

9. Italy to reserve the right to demand the surrender in whole or in part of all infantry and artillery weapons, armored cars, tanks, motor and horse vehicles, including ammunition, belonging to units which have been facing Italian forces; all to be surrendered in the state in which they are at the time of the armistice.

10. The terms to be carried out with reference to the French fleet are similar to those mentioned in the Franco-German armistice agreement.

11. All mines in the maritime military area and naval bases which are to be demilitarized to be rendered harmless within ten days.

12. The French Government to prevent its citizens from leaving national territory to take up arms against Italy.

13. The French Government to prevent warships, airplanes, arms, war materials and munitions of every kind from falling into the hands of the British Empire or other foreign states.

14. French cargo boats not in French ports at the time of the armistice to be either recalled or directed to neutral ports.

15. All Italian cargo boats, together with their cargoes, as well as Italian merchandise consigned to Italy which have been seized from non-Italian ships, to be restored.

16. No airplanes to leave French territory and all airports and equipment to be placed under German and Italian control.

17. The ban on wireless transmission is similar to that mentioned in the Franco-German armistice agreement.

18. Goods to be freely transported between Germany and Italy through non-occupied French territory.

19. The terms to be carried out with reference to all Italian prisoners of war, etc., are similar to those mentioned in the Franco-German armistice agreement.

20. The French Government to guarantee the good preservation of all material that it has or may have to deliver under the terms of the armistice convention.

21. The armistice convention to remain in force until the conclusion of a peace treaty, but may be denounced at any time by Italy in the event the French Government does not fulfill its obligations.

This armistice was signed by representatives of the French and Italian Governments on June 24, 1940, in Rome.

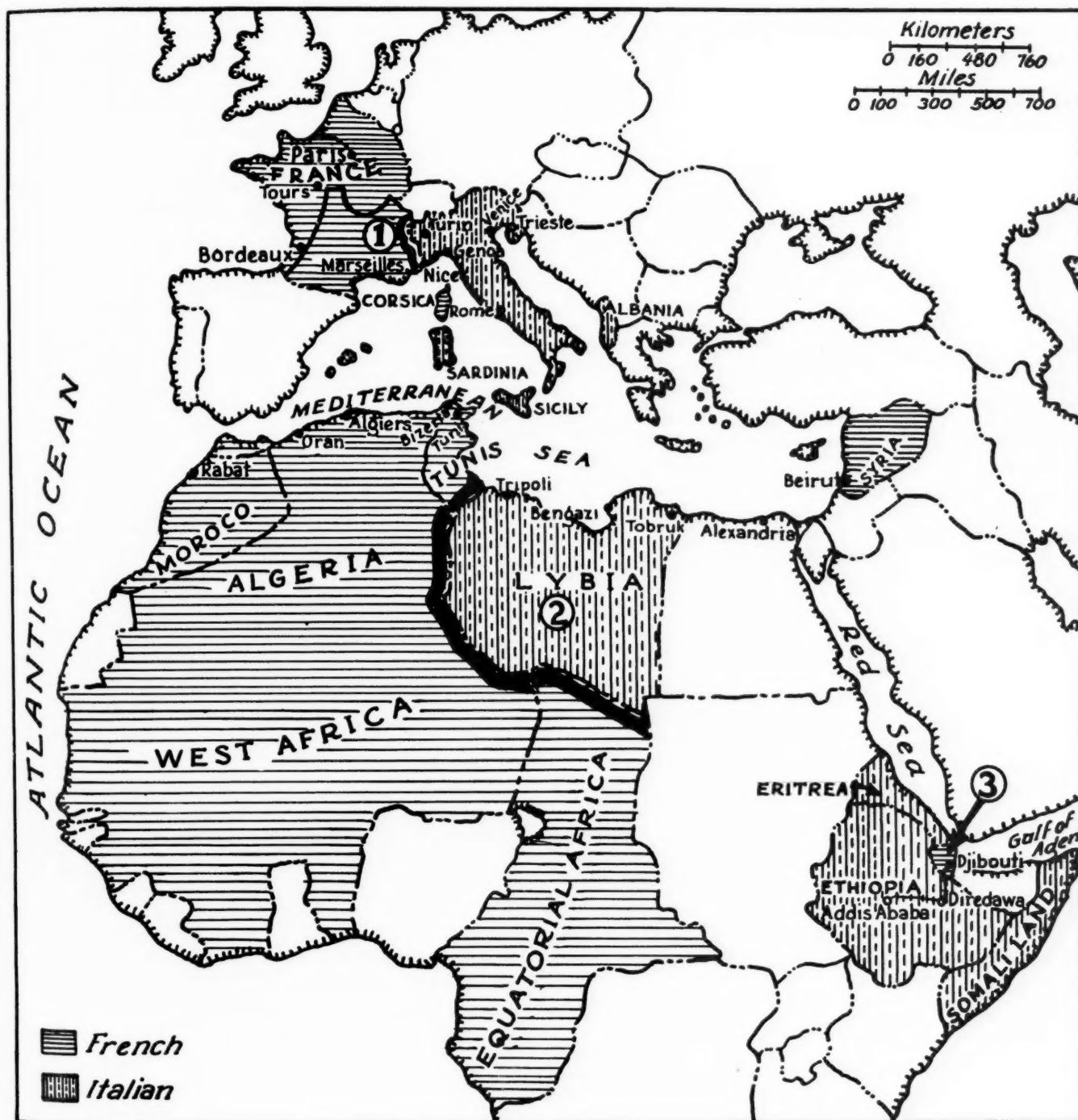
(*Foreign Press*)

Air Mail Services, Rome-Rio de Janeiro: Air mail services in Italy have been cut down and the weekly air mail service between Rome and Rio de Janeiro has been reduced to once a month. Regular air mail services are to be run between Rome and Berlin, Madrid, Lisbon, Belgrade, Bucharest, Budapest, Tripoli and Tirana.

(The Aeroplane, 21 June 1940)

JAPAN

New Cabinet: Prince Fumimaro Konoye, having been designated Premier of Japan, received the imperial command on 17 July 1940 to form a cabinet, following the resignation of Admiral Mitsumasa Yonai and his cabinet. On the same date, the new Premier announced the appointment of



DEMILITARIZED ZONES UNDER TERMS OF FRANCO-ITALIAN ARMISTICE

1. Area in black to be demilitarized by the French and held by Italian troops between the advanced Italian lines and a line drawn fifty kilometers (31 miles) beyond.
2. Libya, encircled by demilitarized zones (area in black) in Tunisia, Algeria, French West Africa and French Equatorial Africa.
3. French Somaliland.

Lieutenant General Hideki Tojo, present Chief of the Army's Air Force, as Minister of War, and the appointment of Admiral Koshiro Oikawa, present chief of the naval base at Yokosuka, as Minister of the Navy.

(Foreign Press)

LATIN AMERICA

Rates of Exchange in U. S. Dollars, 21 June 1940:

Argentina	Peso	\$0.22
Bolivia	Boliviano	\$0.17
Brazil	Milreis	\$0.05
Chile	Peso	\$0.05
Colombia	Peso	\$0.51
Costa Rica	Colon	\$0.19
Cuba	Peso	\$0.90
Mexico	Peso	\$0.20
Peru	Sol	\$0.17
Uruguay	Peso	\$0.38
Venezuela	Bolivar	\$0.31

(Latin American Financial Notes, 14 July 1940)

Strategic Materials in Latin America: At present, the Army and Navy Munitions Board lists fourteen products of a highly strategic character with which the Latin American countries are endowed—antimony, chromium, coconut shell char, manganese ferrograde, manila fiber, mercury, nickel, quartz crystal, quinine, rubber, silk, tin and tungsten. In only a few cases can Latin America supply the United States immediately with all needs, but requirements of at least half of these materials could be furnished on short notice.

(Pan American News, 20 June 1940)

Argentina

Exchange Control Modifications: Exchange control circulars recently issued restrict the issuance of prior exchange permits for certain products when coming from the United States. The products involved are in the following classes: white cement, varnishes, paints, enamels and silk yarn.

It is estimated that imports of these products from the United States in the past year were between \$2,000,000 and \$3,000,000. In the case of silk yarn trade reports are to the effect that the only alternative source at present is Japan; exchange permits are issued in unlimited amount to cover importations of silk yarn from Japan.

The new circulars also relax somewhat the quotas pertaining to barbed wire and light tractors from the United States.

(Latin American Financial Notes, 14 July 1940)

German officers leave Argentina: For several years a German military mission has been employed in Argentina. The chief and second in command of this mission have been teaching in the Argentine Technical College. On 3 July 1940 the Argentine Minister of War announced that their contracts would not be renewed. It has been recently announced that the German Government has decided to send these two officers to Brazil and Chile as Military Attachés.

(Pan American News, 18 July 1940)

Brazil

Belligerents warned: A decree issued by President Vargas on 4 July 1940 stated that merchant ships of belligerent nations would be prevented from departing except by special authorization if they took refuge from attack in Brazilian ports or remained unusually long.

(Foreign Press)

Since the outbreak of hostilities in Europe, the Fiscalization Department of the Bank of Brazil has authorized commercial banks to open irrevocable letters of credit for the purchase of "essentials" made in the United States. Until recently, banks in Brazil have obliged importers to close exchange for future delivery upon opening credits.

The Minister of Finance has just been authorized to have the Brazilian Mint strike off coins up to 10,000 contos to replace paper currency now in circulation.

(Latin American Financial Notes, 14 July 1940)

Chile

Spain severs diplomatic relations: On 16 July 1940 the Spanish Foreign Ministry announced that the Spanish Government had severed diplomatic relations with the Republic of Chile because of the Chilean government's tolerance of an anti-nationalist campaign which has "reached intolerable limits."

(Foreign Press)

Aids to Navigation: For the construction of aids to navigation the Chilean Government will spend \$1,800,000 annually over a period of twelve years. This projected construction includes: lighthouses, buoys, radio stations, radio compass stations, radio beacons, hydrographic ships, coast guard cutters, as well as various other items.

(Revista de Publicaciones Navales)

Colombia

According to recent reports representatives of German manufacturers have been canvassing their old customers, informing them that Germany will again commence shipments not later than September first. Prices quoted are said to be considerably lower for the German goods than current prices for similar American lines, the differential reported by some merchants being one-half in many instances.

(Latin American Financial Notes, 14 July 1940)

Cuba

On 8 June 1940 final approval was given to the new Cuban Constitution which consists of 318 articles. It will come into effect 15 September, when the new Congress meets.

(Pan American News, 20 June 1940)

Mexico

Defense Program: On 18 June 1940 the Mexican Cabinet approved a law providing for compulsory military training, and for a one-year period of service for all Mexican men between 18 and 45.

(Pan American News, 20 June 1940)

The entrance of Italy into the war has modified the situation with regard to the Mexican-Italian barter contract. In addition to preventing the fulfillment of existing agreements providing for barter of Italian rayon for Mexican petroleum (exportations of petroleum had been at the rate of 5,000,000 barrels per annum), Italy's entrance into the conflict has made impossible the delivery of three tank steamers due to be delivered to Mexico this year.

It is understood that a barter contract involving 4,600,000 kilos of rayon yarn had been consummated for the year beginning 1 July 1940.

In an article published in *Excelsior*, 12 June 1940, it was stated that *Compania Importadora y Distribuidora de Artisela*, which is a government organization exercising a monopoly with respect to the importation and distribution of that commodity, had initiated conversations with the Japanese firm *Laguna*, with a view to obtaining from Japan some 2,000,000 kilos of rayon and to arranging the method of acquiring it.

(*Latin American Financial Notes*, 14 July 1940)

Panama

Plans for servicing two highway construction loans have been announced by the government through executive decree. Under the terms of the decree, the proceeds of the gasoline tax up to \$25,000 will be set aside in a special account at the Banco Nacional. Of this ear-marked amount \$15,000 will be used to service the loan negotiated in the United States for the concreting of the Chorrera-Rio highway and \$10,000 will be used for cancelling an overdraft of the Section of Roads of the Department of Public Works.

(*Latin American Financial Notes*, 14 July 1940)

Paraguay

New Constitution: On 10 July 1940 the President of Paraguay approved the new Constitution and issued a manifesto to the nation, declaring that this new basic law is not designed to create a totalitarian state. It follows the fundamental lines of the Constitution of 1870 and guarantees an extensive list of civil liberties. Paraguay will pursue a policy of collaboration based on inter-American solidarity. It has been claimed that from a social and economic point of view, this new Constitution will be one of the most advanced in all Latin America.

(*Pan American News*, 18 July 1940)

Uruguay

The President issued a decree effective 23 May 1940 prohibiting transfer of funds, including bonds and securities, which are on deposit or may be deposited in the future, to persons or organizations resident or domiciled in Denmark, Norway, Holland and Belgium. The Bank of the Republic is invested with authority, however, to make transfers of funds to persons or organizations in these countries if it deems advisable.

(*Latin American Financial Notes*, 29 July 1940)

Compulsory military service: On 11 July 1940 the Chamber of Deputies approved a project for compulsory military service. The Senate has already given its approval.

(*Pan American News*, 18 July 1940)

Venezuela

Withdrawal from League of Nations: On 18 July 1940 Venezuela's withdrawal from the League of Nations became effective. This republic is the ninth Latin American country to leave Geneva.

(*Pan American News*, 18 July 1940)

PORTUGAL

Organization of the Army:

Artillery: (Concluded from C. & G. S. S. Military Review, June 1940):

Light artillery regiments (horse drawn): Headquarters, 1 specialist battery (signal, liaison, observation and machine guns), 3 training groups, 1 mobilization group and 1 mobilization center. The training group consists of a headquarters and 2 batteries (guns and howitzers).

Light artillery regiment (automobile): Same as for horse-drawn regiments, except that the training groups consist of 3 batteries each.

Mountain artillery regiment: Headquarters, 1 specialist battery, 3 training groups of 2 batteries each, 1 mobilization group and 1 mobilization center.

Independent Group—Mountain Artillery: Headquarters, 1 formation of 2 specialist platoons and 2 batteries.

Heavy artillery regiment: Headquarters, 1 specialist battery, 2 training groups of 2 batteries each, 1 mobilization group and 1 mobilization center.

Coast artillery regiment: Headquarters, 1 specialist battery (signal, searchlight, electrical and telemetrist sections), 3 groups of guns and howitzers, 11 fixed batteries, 1 group of 2 long range batteries, 1 training center and 1 mobilization center.

Group of coast artillery for mobile defense: Headquarters, 1 specialist platoon (signal, telemetrist and searchlight operators) and 3 batteries.

Group of coast submarine defense: Headquarters, 2 batteries of guns and 1 torpedo company.

Group of anti-aircraft artillery: Headquarters, 1 formation of 2 specialist platoons, 3 batteries of guns and 1 range finding battery.

Practical school of artillery: Headquarters, 1 group (animal drawn) of 3 batteries (guns, howitzers and mountain guns), 1 group (automobile) of 3 batteries and 2 matériel depots.

The artillery units are stationed as follows:

1st Light Artillery Regiment	Evora
2nd Light Artillery Regiment	Coimbra
3rd Light Artillery Regiment	
(automobile)	Lisbon
4th Light Artillery Regiment	Leiria
5th Light Artillery Regiment	
(mountain)	Penafiel
1st Heavy Artillery Regiment	Lisbon
2nd Heavy Artillery Regiment	Oporto
Coast Artillery Regiment	Lisbon
Group of Submarine Defense	Paco de Arcos
1st Group of Antiaircraft	
Artillery	Lisbon

2nd Group of Antiaircraft	
Artillery	Torres Novas
3rd Group of Antiaircraft	
Artillery	Oporto
Independent Group—Mountain	
Artillery	Guarda
1st Independent Battery—	
Coast Defense	Ponta Delgada (Azores)
2nd Independent Battery—	
Coast Defense	Funchal (Maderia)

(Foreign Military Notes)

Germany, as compared with 580,000 tons called for by the German-Rumanian agreement, and 183,000 tons exported to Germany during the same months in 1939.

On 9 July 1940 a government decree was signed in Bucharest prohibiting the sale outside the country of stock in any foreign-owned Rumanian company. This took place a few hours after reports had spread that the \$100,000,000 British oil interests might be transferred to Soviet Russia.

On 17 July it was reported in Bucharest that 3,000 Rumanian tank cars, containing sufficient gasoline to operate 1,000 military planes for forty-five days, would shortly be on their way to Germany. Since the beginning of the War, Germany has been compelled to use her own tank cars to transport oil from Rumania. However, following the orientation of Rumania's foreign policy to that of Germany, the 9,000 tank cars owned by the Rumanian oil companies have been requisitioned by the government, and one-third have been designated for the movement to Germany.

(Foreign Press)

RUSSIA

Invasion of Rumania: Within less than two weeks after occupying Estonia, Latvia and Lithuania (see Baltic States), Russia, following an ultimatum to Rumania, initiated on 28 June 1940 the occupation of Bessarabia and Northern Bucovina. On the same date Rumania agreed to cede these territories to Russia (see Rumania—Map). For Russia's claims to Bessarabia see *C. & G. S. S. Military Review*, June 1940, page 26. Before 1919 Bucovina was a part of Austria. In two departments of this province—Cernauti and Storoginet—the Ukrainians and Russians constitute at least half of a population amounting to 476,000.

The Russian march was halted, generally, along the Prut River, but Russia continued to pour great masses of troops into the occupied areas and on 7 July she added some additional armored divisions to bolster her occupation of the invaded provinces.

New Soviet Republics: Latvia, Lithuania and Estonia on 21 July 1940 voted to be admitted into the Soviet Union. The inclusion of these three Baltic States eliminates them as buffer states along the German-Russian frontier created by the partition of Poland, and greatly enhances the strategical power of Russia on the Baltic.

(Foreign Press)

SPAIN

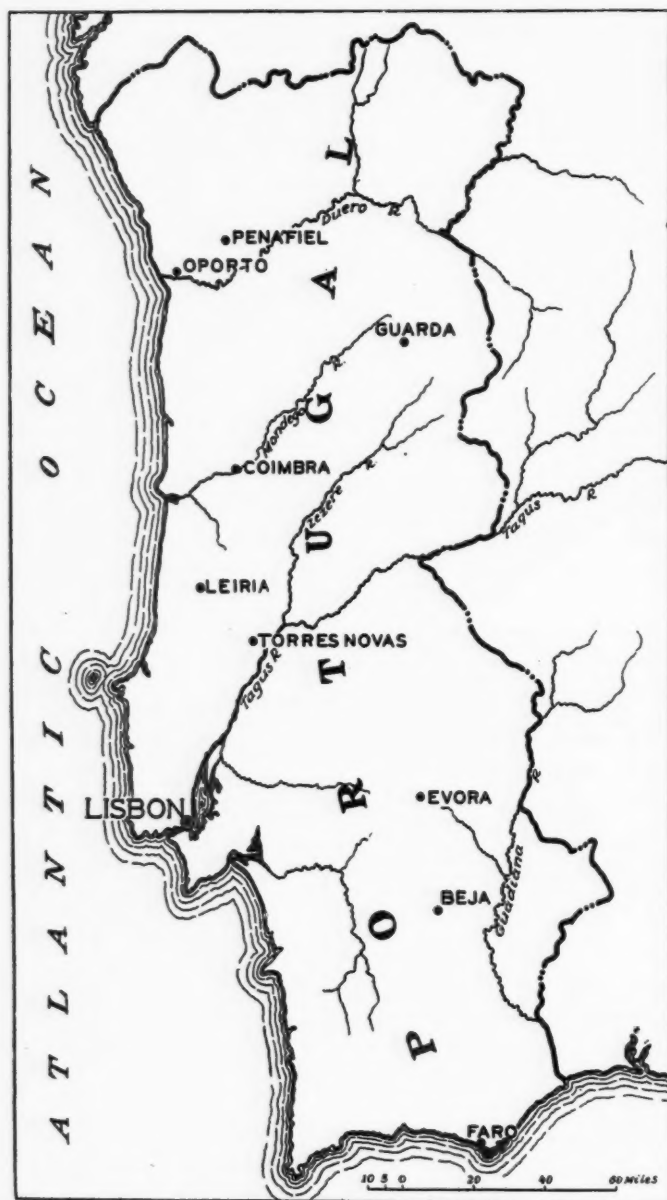
Occupation of Tangier: On 14 June 1940 the Spanish Government occupied the international zone of Tangier, across the Strait from Gibraltar and within artillery range of the British stronghold.

(Foreign Press)

SWEDEN

Swedish Air Lines, Stockholm-Budapest: Recent reports from Riga announce that Swedish Air Lines (A. B. Aerotransport) and the Russian company, Aeroflot, will operate a new daily service between Stockholm, Kaunas, Minsk and Budapest.

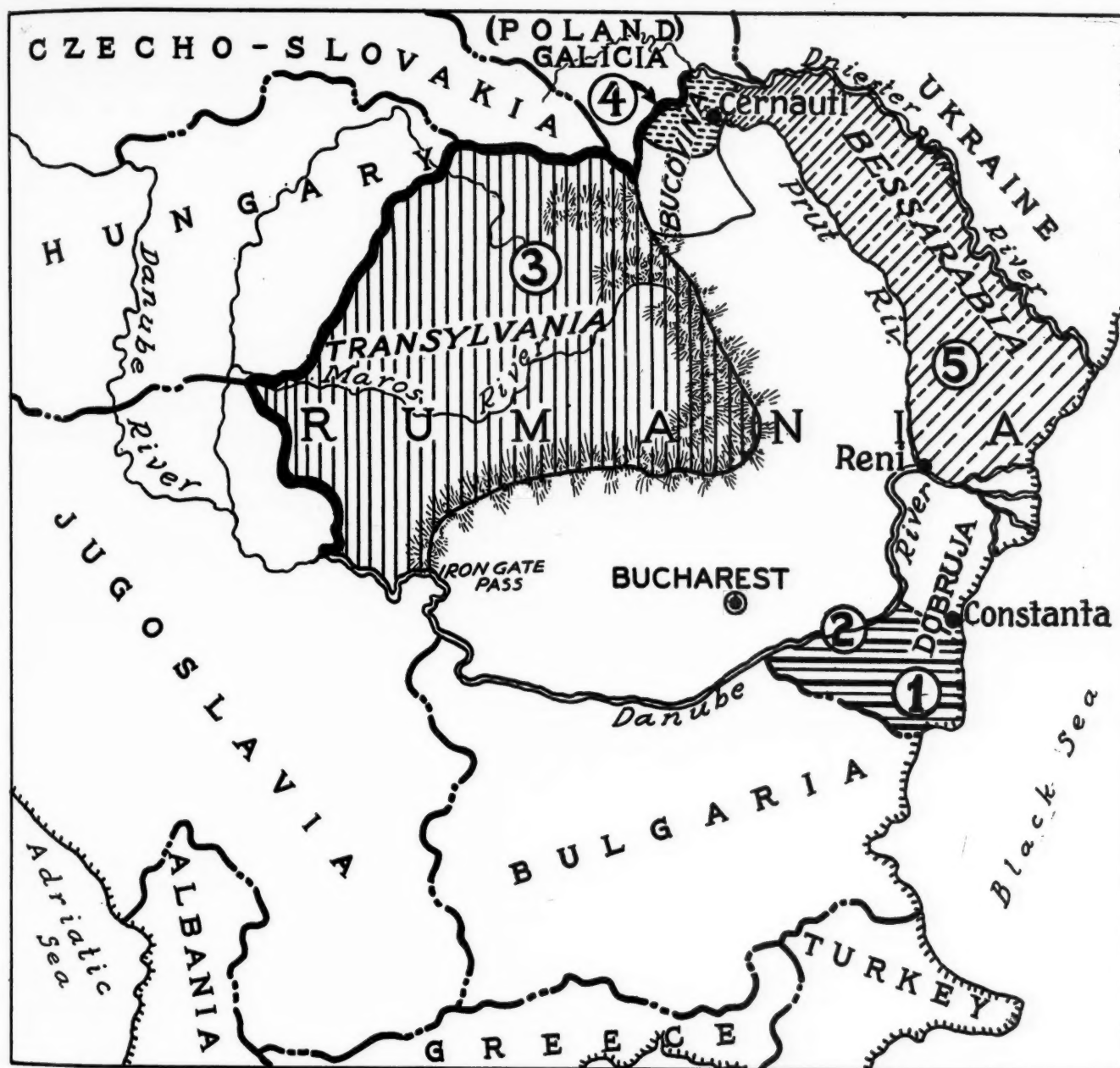
(The Aeroplane, 21 June 1940)



LOCATION OF ARTILLERY UNITS

RUMANIA

Oil Shipments to Germany: During the first three months of 1940 Rumania exported only 75,000 tons of oil to



RUMANIA AND THE DISPUTED PROVINCES

1. South Dobruja taken from Bulgaria in 1913.
2. Rumania of 1914, to include North and South Dobruja.
3. Transylvania lost to Rumania by Hungary in 1918.
4. Northern Bucovina ceded to Russia 28 June 1940.
5. Bessarabia ceded to Russia 28 June 1940.

TURKEY

The Turkish Navy: Although Turkey is the strongest naval power in the Balkan group, her Navy contains but few ships which were built subsequent to 1931. The following classification will give some idea of the extent to which Turkey is capable of controlling the Dardanelles and the Bosphorus.

Battle Cruisers:

Yavuz (ex-German Goeben). Completed in 1912 and transferred to the Turkish Navy in 1914. Displacement

23,100 tons. Armament: ten 11-inch guns, ten 5.9-inch guns, two 3.5-inch guns, four 3.5-inch antiaircraft guns, four machine guns and two 19.7-inch torpedo tubes.

Old Cruisers:

Hamidiye

Completed in 1903. Displacement 3,830 tons.

Mecidiye

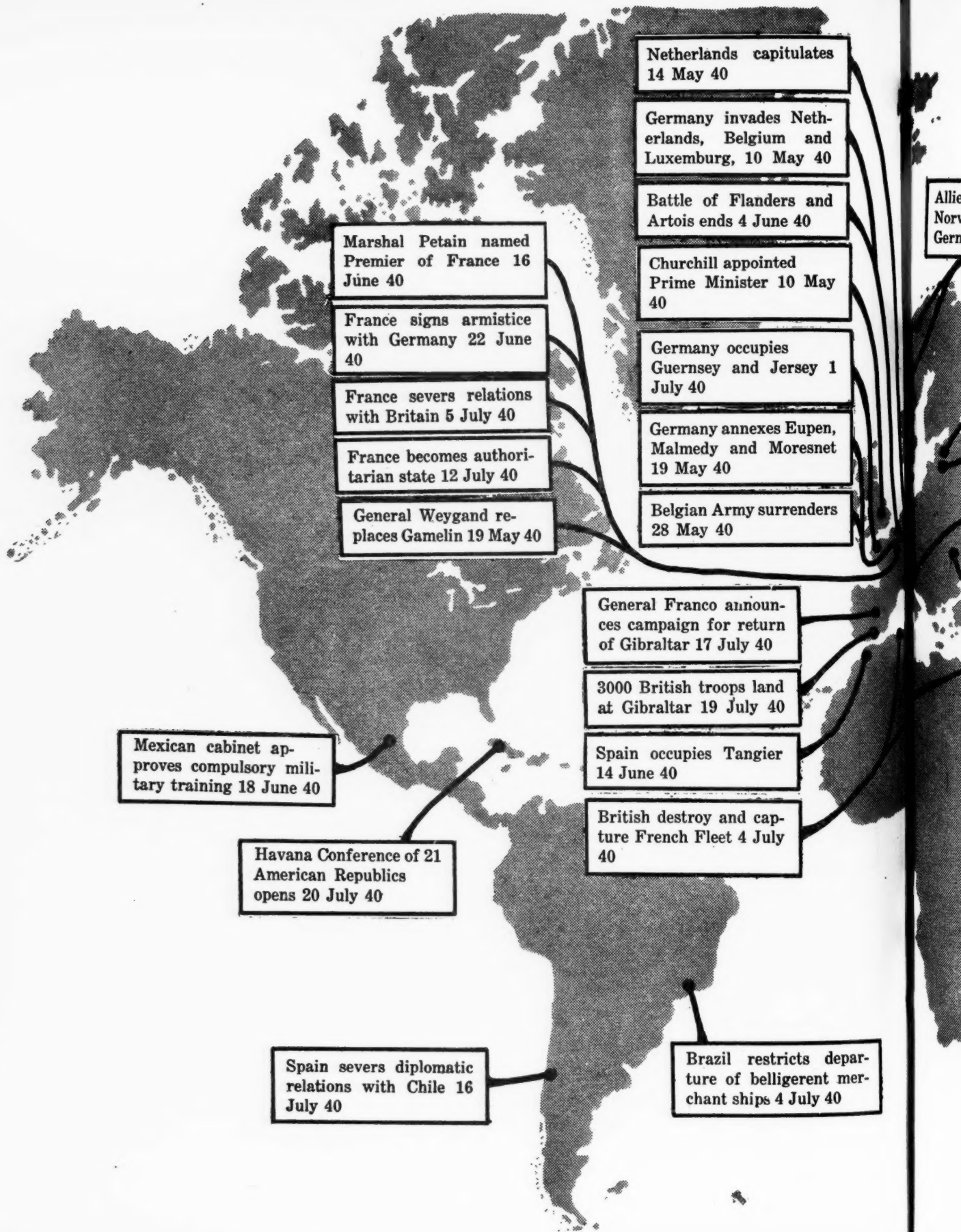
Completed in 1903. Displacement 3,500 tons.

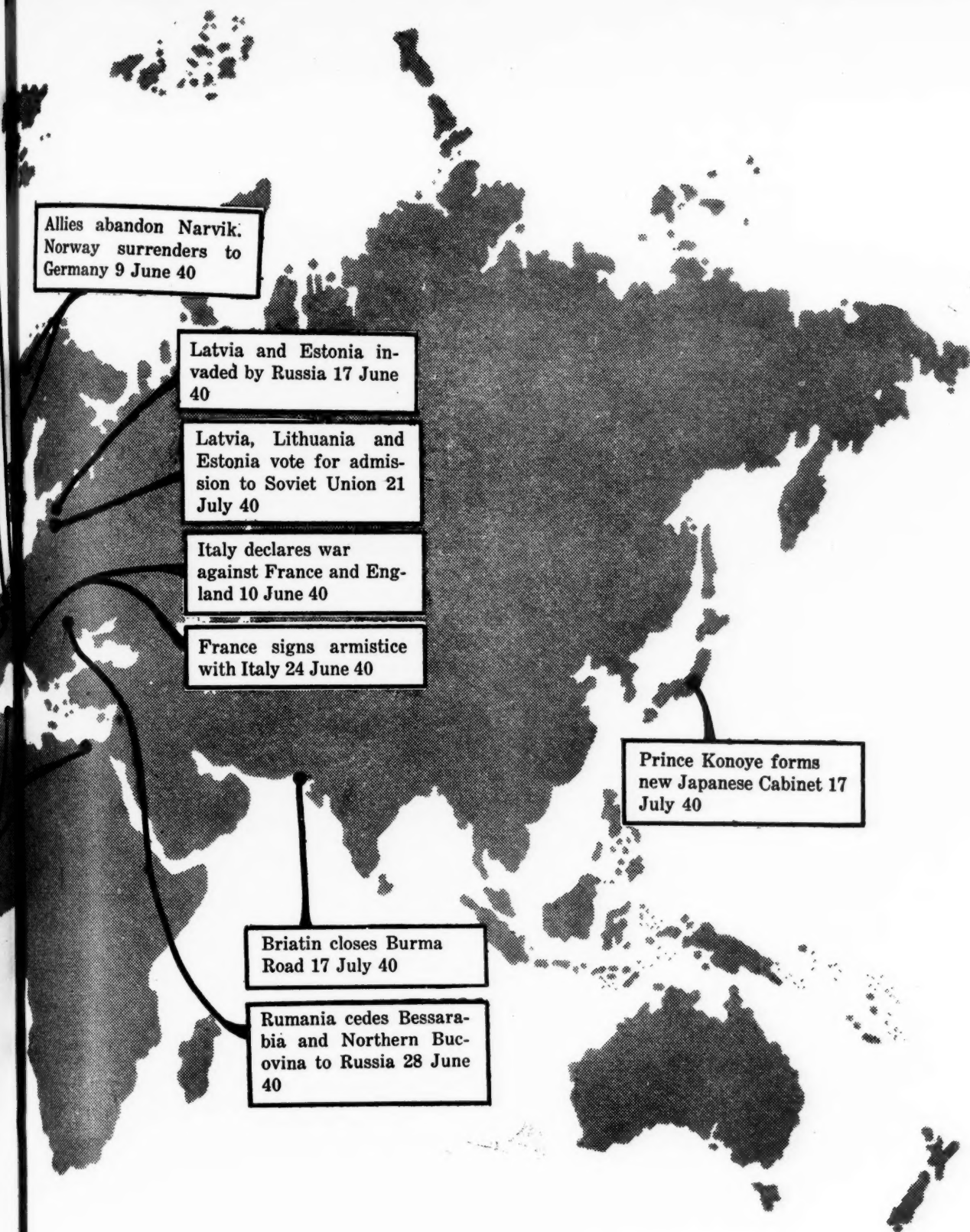
Destroyers:

Demirhisar

Sultanhisar

(Continued on page 24)





Gayret

Muavenet

All ordered in 1939. Displacement 1,360 tons.

Kocatepe

Adatepe

Both built in 1931. Displacement 1,250 tons (standard), 1,650 tons (full load).

Tinaztepe

Zafer

Both built in 1931. Displacement 1,206 tons (standard), 1,610 tons (full load).

Submarines:

Burak Reis

Murat Reis

Oruç Reis

Uruç Ali Reis

All ordered March 1939. Displacement 683-970 tons.

Atilay

Yıldırım

Both built in 1939. Displacement 934-1,210 tons.

Batıray

Built in 1939. Displacement 1,044-1,351 tons.

Gür

Built in 1932. Displacement 750-960 tons.

Dumlupınar

Built in 1931. Displacement 920-1,150 tons.

Sakarya

Built in 1931. Displacement 750-940 tons.

Birinci İnönü

Built in 1927. Displacement 505-620 tons.

Yachts:

Savarona

Built in 1931. Displacement 5,750 tons.

Ertugrul

Built in 1903. Displacement 964 tons.

Three Motor Torpedo Boats:

Built in 1931. Displacement 32 tons.

Mine Layers:

Three built in 1939. Displacement 350 tons.

One built in 1938. Displacement 350 tons.

One built in 1912. Displacement 365 tons.

One built in 1886. Displacement 616 tons.

Mine Sweepers:

Two built in 1912 and one in 1911. Displacement 413 tons.

Torpedo Gunboats:

One built in 1907 and one in 1906. Displacement 775 tons.

Submarine Depot Ship:

One built in 1923. Displacement 16,800 tons.

Surveying Vessel:

One built in 1912, refitted in 1925. Displacement 502 tons.

Seagoing Tug:

One built in 1915. Displacement 336 tons.

Motor Launch:

One built in 1911.

Oiler:

One built in 1935. Displacement 750 tons.

Collier:

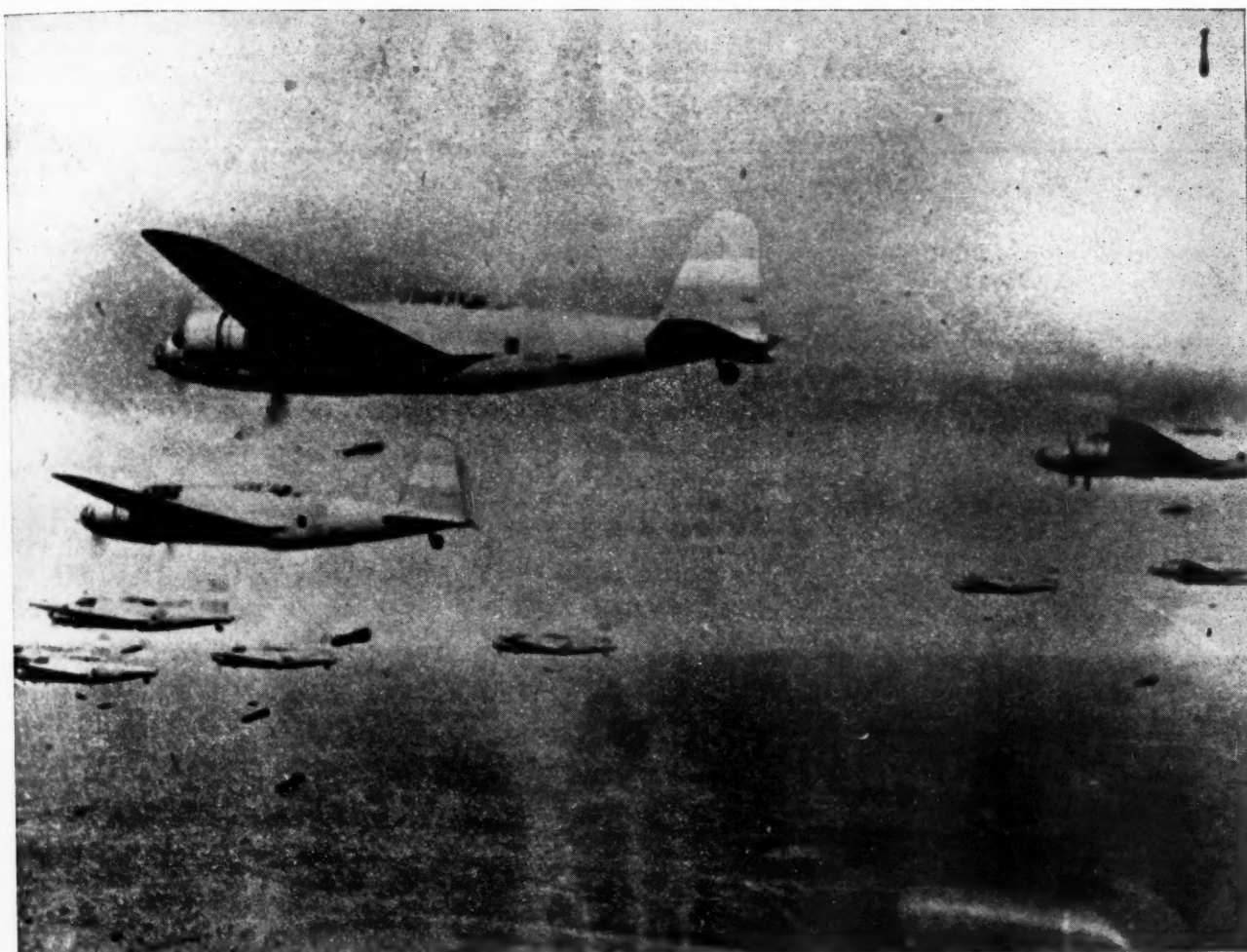
One built in 1920. Displacement 5,000 tons.

(Jane's Fighting Ships)

* * * * *

It is very difficult for a nation to create an army when it has not already a body of officers and noncommissioned officers to serve as a nucleus, and a system of military organization.—NAPOLEON, Military Maxims.

The Art of War is divided between force and stratagem. What cannot be done by force, must be done by stratagem.—FREDERICK the GREAT.



Acme.

MATSUYAMA UNIT OF THE JAPANESE AIR FORCE BOMBING CHINESE STRATEGIC POINTS. NOTICE THE SHOWER OF BOMBS THAT DOT THE SKY.

The Sino-Japanese War

BY LIEUTENANT COLONEL E. M. BENITEZ, *Coast Artillery Corps*

The great Far Eastern conflict has entered into its fourth year and the military deadlock which has prevailed for some time still continues, with no substantial gains on either side. Excepting a few minor operations, the last year of the "world's forgotten war" has yielded no impressive military results comparable to the sweeping Japanese advances of 1937 and 1938. At present, Japan's army seems to be "bogged down" in China.

Japan, due to the European War, has acquired more freedom of action in China lately and is endeavoring to bring the enemy to terms by cutting off all possible lines of supplies, having failed to gain a decisive victory on the battlefield.

Early in June of this year, about 15,000 Japanese troops advanced across the lower Han river near Shayang and on 8 June occupied the Yangtze River port of Shasi.

This force then began a drive westwards and on 11 June occupied the important Yangtze river port of Ichang, some 260 miles from Chungking—China's third wartime capital—as the crow flies. The strategical importance of Ichang is obvious. Situated at the outlet of the Yangtze river, its occupation blocks the principal communication from Szechwan Province and leaves practically no supply route across the mountains from the upper Han river to the North and Chenchou in west Hunnan Province, a distance of over 300 miles. Control of the Yangtze river as far as Ichang effectively splits the Chinese forces in Central China into two groups, cooperation between which becomes practically impossible.

Meanwhile, Japanese warplanes have continued their raids over Chungking and Szechwan towns causing considerable casualties and damage to property. On the other

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hand, Chinese guerrillas have been reported active in practically all provinces of occupied China and even Shanghai was the scene of a raid last July.

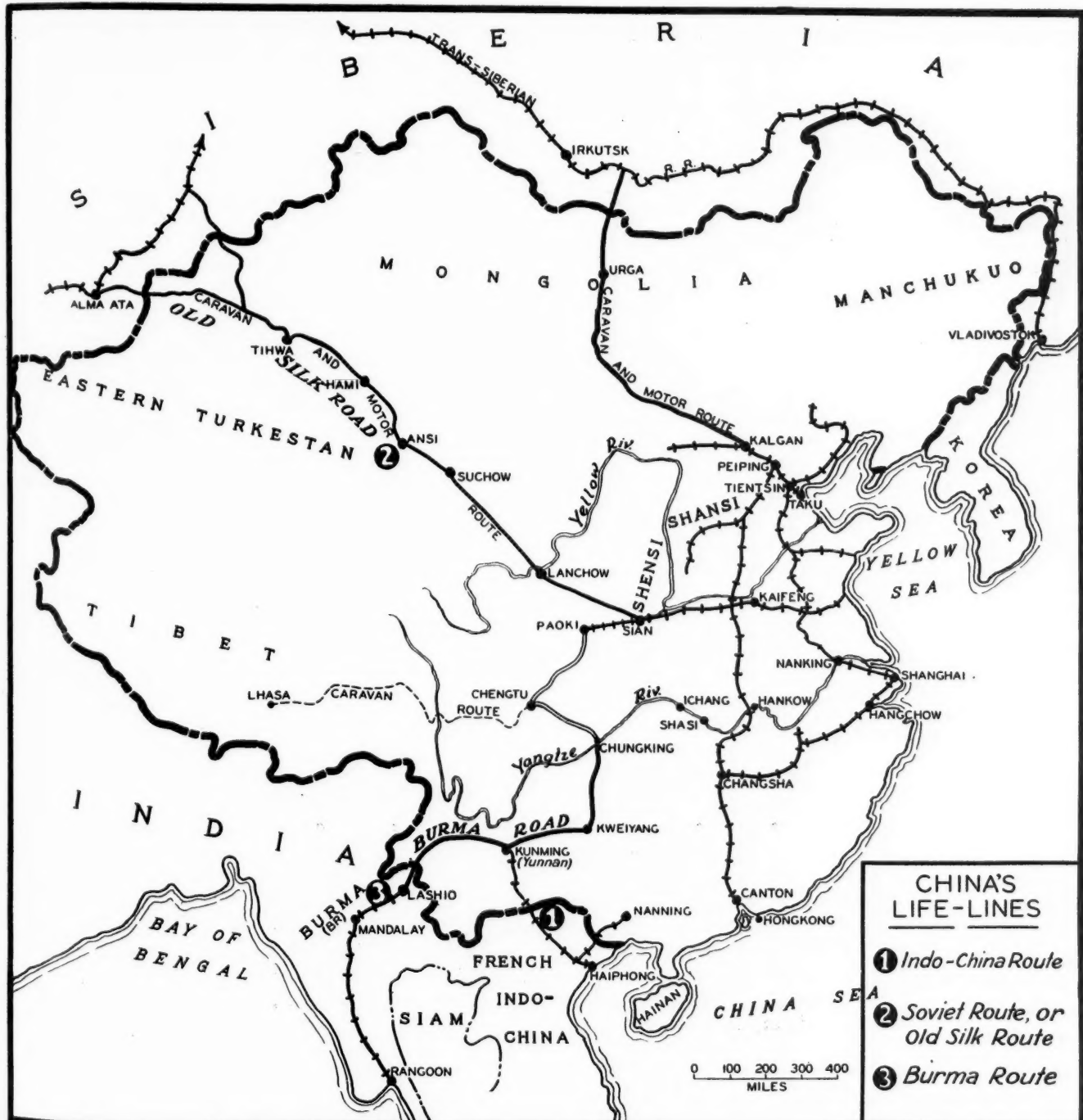
The fall of Canton in October 1938, deprived China of her last important port of entry for war materials from abroad and made her more dependent than ever upon her three life-lines: The Indo-China route, the Soviet Route (old Silk Road) and the Burma Road.

Taking advantage of the French collapse, pressure was put on the French authorities to stop all shipments of arms and supplies over the Indo-Chinese railway, which runs from Haiphong into Yunnan Province. This was promptly followed by the dispatch of a Japanese naval squadron to Hai-

phong, to enforce the blockade of that harbor, while Japanese army officers would act as inspectors in order to prevent shipment of supplies to China.

Considerable pressure was similarly put on Great Britain and as a result the following Anglo-Japanese agreement was signed on 12 July 1940:

1. Effective 18 July 1940, Britain would prohibit for three months transit through Burma of arms, munitions, gasoline, trucks and railway materials.
2. Britain would prohibit for a similar period the exports of these goods from Hongkong to China.
3. Japanese consular officials in Hongkong and Rangoon would maintain close contact with British authorities



regarding measures to be taken for the purpose of making this agreement effective.

The Indo-China route was, in fact, handling only a trickle of war supplies. The Burma route, on the other hand, was the most important supply line available to China. The Burma Highway stretches between Rangoon—through Lashio and Mandalay—to Kunming (formerly Yunnan), across the high and rugged mountains of Yunnan Province. The distance between Rangoon and Kunming is about 2,100 miles and is served by a railroad line only a quarter of the way. Since March 1939, when the Burma highway was opened, military supplies have poured in an evergrowing flow, and it has been reported that in July 1939 no less than 1000 trucks were operating along this route. Service stations are said to have been set up every 100 miles and there are three major supplies stations evenly distributed along the entire route. The speed with which the road was built and the lack of tools and construction materials have made defects inevitable. Landslides have been frequent, the sharp

turns and twists of the road make driving hazardous, the surface of the highway is not metaled and rains cause wash-outs; but, in spite of all these difficulties, the road has been quickly repaired by labor gangs and continued in operation with very minor interruptions. British action in closing the Burma Road is unquestionably a severe blow to China's capacity to resist and will make her practically wholly dependent upon Soviet Russia.

New arsenals which have been established in Free China with the machinery brought from Shanghai and Hankow are producing munitions. But China is not yet an industrial nation and the bulk of her weapons must come from abroad. Today, quantities of military supplies—mainly field guns and aircraft—are pouring into China over the Red Caravan Route. However, over this route goods must be carried the entire distance of over 2,000 miles by trucks. It leads through desolate country and obviously, even with a good road, much of the carrying capacity of the trucks must be devoted to fuel supplies.

For over three years, China has been resisting an invader who possesses immeasurable superiority in the equipment of modern warfare. Her ports, the bulk of her railroads and practically all her industrial centers fell into the enemy's hands long ago. The toll of Chinese casualties—military and civilian—runs into the millions. Her government has been forced to move from Nanking to Hankow and then to Chungking; yet, at no time has Chiang Kai-shek shown any readiness to capitulate. During these three years, the world has witnessed the conquest or domination of Albania, Austria, Czechoslovakia, Poland, Finland, Denmark, Holland, Belgium, Norway, France, Latvia, Estonia and Rumania. China has not only managed to preserve her independence, but it has also inflicted heavy damage and has made Japan weak and vulnerable. In fact, it may be said that this war has been converted into a marathon race to see whether China or Japan can stand the strain longer.

The Far Eastern conflict has become a war of tremendous stakes, a war which may lead to the disappearance of China as an independent nation or the ruin of Japan as a great power. The collapse of France has made possible the choking of China's main supply lines and thus the outcome of this great war may be to a large extent dependent upon the outcome of another great engagement 10,000 miles away which is, as we go to press, still unfought; China's fate may be decided in the "Battle of Britain."

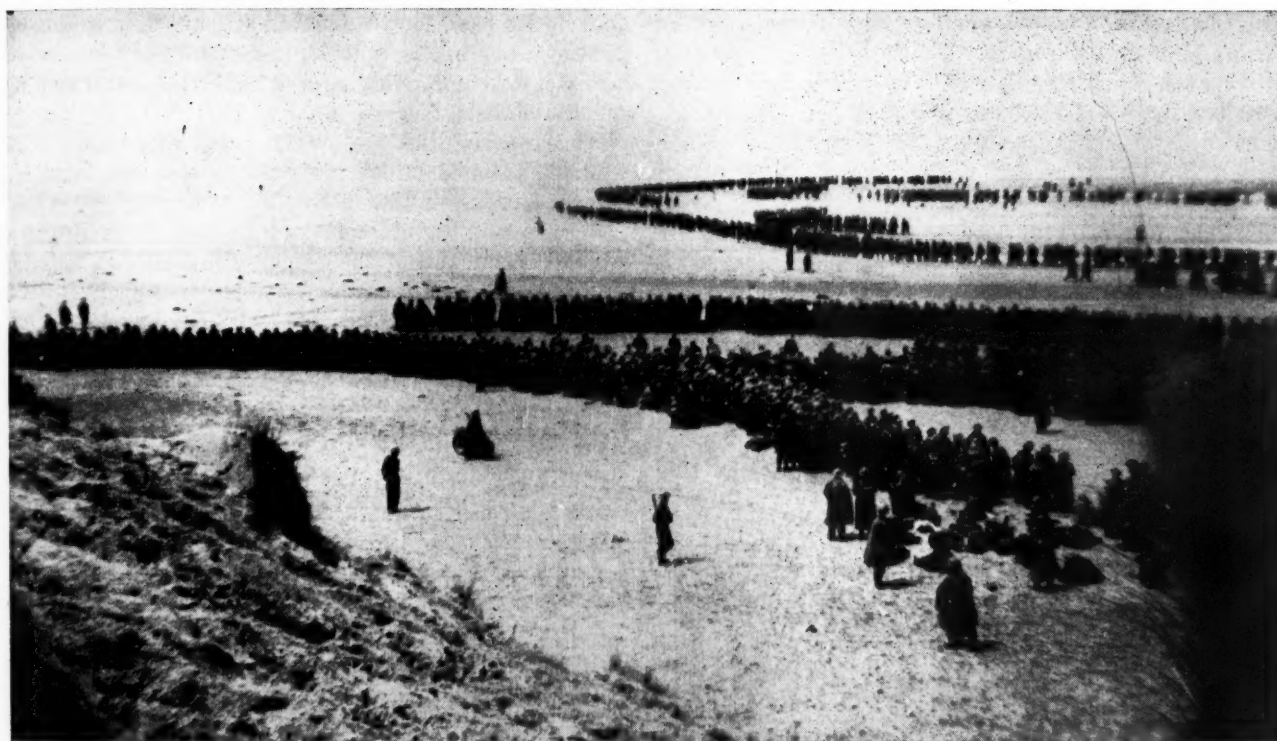


Acme.

Japanese Army Inspectors about to take off from the Tokyo Airport for French Indo-China to watch how the French keep their agreement not to shift war matériel to the Chinese Army. General Isaku Nushihara (extreme left) is head of the mission of 40 Army, Navy and Civilian Inspectors.

* * * * *

Nothing is more important in war than unity in command. When, therefore, you are carrying on hostilities against a single power only, you should have but one army acting on one line and led by one commander.—NAPOLEON, Military Maxims.



MASS EVACUATION OF BRITISH TROOPS AT DUNKERQUE, FRANCE

Wide World Photo.

The European War

BY CAPTAIN M. R. KAMMERER, *Infantry*

On Friday, 10 May 1940, Germany surprised the world by invading simultaneously Luxembourg, Holland and Belgium with strong mechanized forces closely supported by masses of bombing planes. This third Nazi Blitzkrieg was so powerful and so efficiently conducted that the Netherlands submitted in four days, Belgium surrendered fourteen days later, and France succumbed to Germany's might within thirty-nine days after the beginning of the invasion.

The sudden collapse of Poland last September and of Norway this past April had caused no great surprise because they were comparatively weak powers. Nor was the world amazed by the sudden capitulation of Holland and of Belgium. France, however, was a nation rich in resources, protected by the costliest and most impregnable system of fortifications ever constructed, defended by a large and what was considered the "finest army in the world," with a legendary record of tenacity and resourcefulness. The complete military defeat of this great nation in the course of less than six weeks seemed utterly incredible.

The German army stands today as the smoothest running military machine in the world, and its campaign in Belgium and France, so cleverly conceived and so brilliantly executed, deserves special study because it contains certain vital lessons which may prove of value to military students.

OPPOSING FORCES

Germany

It is estimated that Germany mobilized between 6,000,000 and 7,000,000 men for her great offensive against the Allies. It is quite probable that one-third of these totals, including retired and disabled personnel, were charged with the administrative work involved in mobilizing and servicing a force of such proportions. There remained, however, sufficient able-bodied men to fill out 240 regular divisions, each ready for field service.

Of these 240 divisions, 200 were infantry divisions, 12 were armored or mechanized divisions, 2 or 3 were air infantry divisions, and the rest were storm troopers, frontier guards, mountain and cavalry divisions.

The infantry division, about 12,000 men, consisted of three infantry regiments, one light artillery regiment, a reconnaissance unit, an antiaircraft group, engineers, a signal company and administrative services.

The armored division consisted essentially of one tank brigade of 450-500 tanks organized into two regiments of two battalions each; one motorized rifle brigade consisting of a motorized rifle regiment, a motorcycle battalion, an antitank battalion, an artillery regiment, engineer and signal

troops; one motorized reconnaissance battalion; necessary services.

The air infantry division appears to have been composed of parachute troops, infantry landing troops, a light artillery unit and a light tank battalion.

Estimates of the strength of the German air force in May, 1940 varied from 12,000 to 19,000 planes. Of as much importance as this actual strength, however, was the ability of German factories to replace these planes at an estimated rate of 2,000 per month.

That the German army was well and fully equipped for war was first fully demonstrated in Poland. For seven years German labor and German machinery had been devoted entirely to the development and equipment of a strong military machine. Every item, from concentrated food capsules to armored trains, had been provided. Germany's only weakness was an apparent lack of raw materials and fuel for her military engines, shortages which might mean defeat in a long war of attrition—provided an effective blockade could be maintained against her.



Wide World Photo.

GENERAL WALTER VON BRAUCHITSCH
Commander of the German Armies

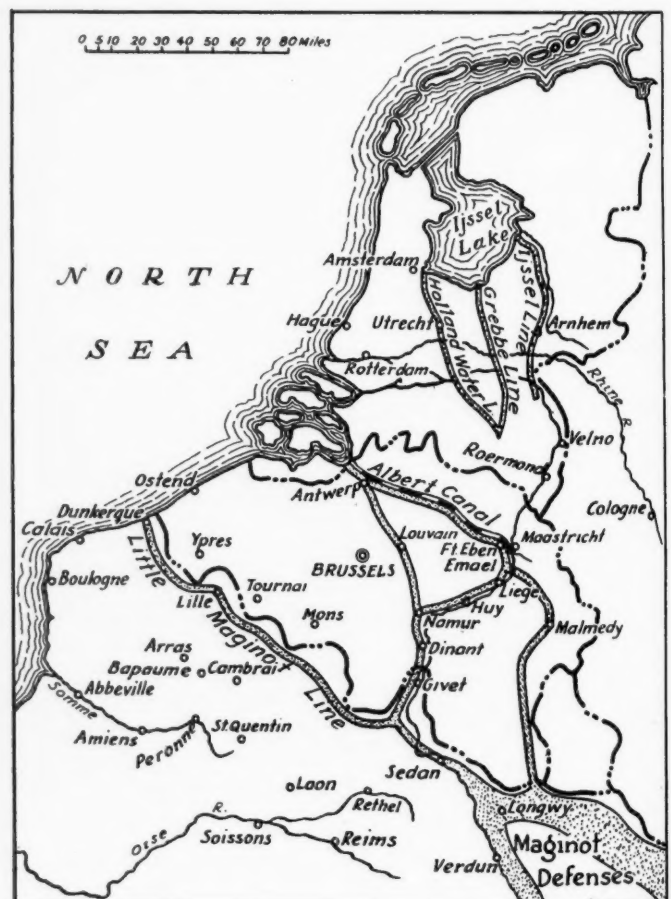
An important item on the credit side of the German ledger was the ability of her leaders, particularly of the Commander in Chief, Field Marshal Walter von Brauchitsch. He has been the outstanding military genius of the present war, and is considered responsible for Germany's new methods of warfare as well as for the strategy adopted for the Polish, Norwegian and French campaigns. His plans, prepared with the infinite care and thoroughness for which he is noted, have seldom been questioned or altered by Führer Hitler.

Following the breakthrough at Sedan, von Brauchitsch assumed command of the force, estimated at 20 divisions, that was sent into the salient, and personally supervised the operations of that force in checking the French attempts to reduce the salient and in preparing for the Battle of France that was to follow the Battle of Flanders.

Allies

Much of the strength of the forces opposing the Germans lay in the frontier fortifications that had been constructed in recent years and into which much time, labor and money had been placed. (See Map No. 1) It appears now that too much faith may have been placed in the effectiveness of these defenses which were not built high enough to stop flying fortresses nor densely enough to halt a properly coordinated ground attack.

France, of course, had her Maginot Line opposite the German frontier in Alsace and Lorraine. Costing as much



MAP No. 1—ALLIED FORTIFICATIONS

as \$2,000,000 per mile, it had been estimated that this line could not be penetrated without the loss of at least a million men. But the line extended only from the Swiss frontier to Montmédy, opposite the southern tip of Belgium. From there to the English Channel, the French had, until 1936, counted on the Belgian fortifications and on the Franco-Belgian protective alliance. When King Leopold cut loose from this alliance late in 1936, the French immediately took steps to extend their line of fortifications to the Channel, but this extension, referred to as the Little Maginot Line, could not be compared in strength to the main sector of the line.

Occupying these fortified areas or in reserve ready to back them up, France had 140 divisions. These soldiers, reputedly well trained, were supposed to be the finest in the world, particularly stubborn when defending their native soil. The French air force consisted of less than 6,000 planes, which could be replaced at a rate of only 350 planes per month. The French tanks were, for the most part, grouped in battalions and assigned to corps.

In command of the combined French and British forces in France when Germany invaded the Low Countries was Generalissimo Marie Gustave Gamelin. Having superintended the construction of the Maginot Line as Chief of Staff of the French Army, he was thoroughly familiar with its capabilities and appears to have been largely responsible for the defensive strategy decided upon by the Allied forces. When this strategy failed, when the Maginot Line was pierced and the Allied position in Belgium became critical, a change of strategy and of commanders became inevitable.

Maxime Weygand, who had been commanding the Allied forces in the Near East, was called to Paris on 19 May to take over the command of the Allied operations. Although 73 years old himself, one of his first acts upon assuming his new tasks was to replace 15 generals by younger officers. He was not a graduate of the French War College, but he had had plenty of valuable experience. He served as chief of staff of Foch's famed Ninth Army in the First Battle of the Marne. In 1920 he took command of the Polish forces in their successful struggle against the Bolsheviks.

General Weygand took over command of the French Armies at a desperate moment. The French had not merely suffered a disastrous defeat; they had also been forcibly impressed with the fact that their whole system of defense was useless in the face of a German mechanized onslaught. General Weygand had very little time to reorganize these tactics.

Cooperating with the French forces was a British Expeditionary Force of approximately 400,000. Prior to the German invasion, this force had occupied positions on the French frontier near the Channel. Commanded by Viscount Gort, this force had had many months to become familiar with the local fortification system, and many of its units had been sent to the Maginot Line during the dull winter and spring months to gain experience in patrolling and reconnoitering.

Only the necessary observation and reconnaissance planes accompanied the British troops in France. The bulk of the Royal Air Force, approximately 10,000 planes, was held in England as was most of the British mechanized force.

The Belgian army of 700,000 was organized to defend the country along the Albert Canal and the Meuse River.

Behind these waterways an extensive system of pillboxes, gun emplacements and tank traps supplemented the strong fortresses of Antwerp, Liège, Huy, Namur, and Dinant. Lighter fortifications were prepared along the general line of the Dyle River between Antwerp and Namur, while scattered throughout the Ardennes forest between the Meuse and the frontiers were many more fortified localities.

The key to this defensive system was, in 1940 as in 1914, the fortress of Liège, where a breakthrough would enable an invader to roll up either the Albert Canal Line or the Meuse River Line. A few miles north of Liège near the junction of the River and Canal where the German forces had broken through in 1914, the Belgians had built the modern fort Eben Emael to prevent a repetition of the 1914 disaster.

Despite a formal guarantee of neutrality from Germany to Belgium in 1937, King Leopold had his army mobilized and ready to meet the invader the morning of 10 May. This army, fairly well trained for defense, was poorly equipped and was entirely dependent upon the French and British for antitank and antiaircraft guns in addition to planes and heavy artillery.

Holland, following a period of more than one hundred years of peace, had but recently reached the conclusion that her previously unquestioned status of neutrality might be violated, and steps were taken immediately to build up her national defenses. While a string of light fortifications stretched along her eastern border, her main system of fortifications was based on her waterways and her ability to flood her lowlands. Three lines—the IJssel, the Grebbe, and the Holland Water Line through Utrecht—could be flooded by opening the dikes holding back the waters of Lake IJssel. Behind the flooded areas were the usual pillboxes and machine-gun emplacements but no heavy artillery or antiaircraft guns.

The Dutch army included approximately 400,000 men, who, like the Belgians, had been mobilized for the impending invasion. Their main mission was the defense of the area in which Amsterdam, Utrecht, Rotterdam and the Hague are located.

OPPOSING STRATEGIES

German military strategy has always been based on the annihilation of the hostile forces as its primary objective. Once this has been accomplished the war has been won.

Opposed by a coalition of forces, victory comes most easily if that coalition can be split up, and each power defeated separately. For Germany, the nearest point for driving a wedge between Great Britain and France was via Belgium. A successful drive across Belgium and northern France would provide Germany with the necessary air and naval bases for operations against the British Isles, and at the same time it would provide the easiest access into France.

That Holland was included in the plan of the German drive was simply due to the German desire to control every available port and air base from Narvik in northern Norway to the Atlantic ports of France. Threatened from so many directions, the problems of the British would be materially increased while German soil would be much safer from air attacks if the immediate threats to Britain came from these bases in conquered buffer territories.

By invading Holland and Belgium, the Germans hoped (and their hopes were fulfilled) that the French and British would send troops and mechanized forces out of France to the aid of the Low Countries, where the Germans could defeat them in a war of movement. German strategy has always been based upon mobility and her armies have always been trained and organized accordingly.

The Schlieffen Plan, as carried out in 1914, appeared to be the logical plan for obtaining the desired objectives. The German High Command probably estimated, however, that the Allies also considered this to be the most logical plan and that they would be, therefore, best prepared to oppose such a plan. So the execution of that plan was modified. While considerable strength was concentrated on the swinging right flank, the main blow was struck through southern Belgium, a blow so strong that it not only cut off the Allied forces in Belgium but also established a jump-off line for continuing the wheeling movement through France. If the penetration across southern Belgium and northern France had proved unsuccessful, the wheeling movement of the Schlieffen plan might still have been attempted.

There is every reason to believe that the Germans themselves did not contemplate such quick and successful results as were achieved by their plan.

The fact that their enemy had no flanks capable of envelopment did not prevent the German armies from resorting to this, their favorite form of attack for destroying opposing forces. The German armies resorted to the customary expedient of creating the necessary flanks by strong penetrations at weak spots in the hostile line. Thus the thrust through the Sedan sector created a vulnerable flank for the Allied troops in Belgium. These troops were in turn cut into smaller groups by strong drives at the weak spots. As these penetrations drove through the enemy positions they spread out in rear of those positions and threatened to envelop the enemy. The entire French Ninth Army, and considerable portions of the French Seventh Army were thus destroyed in Belgium.

Whereas Germany's strategy and tactics have, for more than a century, consistently favored offensive action, the French conception of war has wavered back and forth between the offensive and the defensive. In 1914 the French, much to their regret, knew no other law than the offensive. And it may be argued that, had the French assumed the offensive in September 1939, when Germany's air and mechanized forces were having a dry run in Poland, their fate could have been no worse than it became eventually.

However, for an offensive against Germany, the only avenue of attack, without declaring war on or violating the neutrality of some neutral state, was through the German Siegfried Line. And France had as much respect for the Siegfried Line as she had pride in her own Maginot Line. Furthermore, the French knew that they did not have the necessary tanks, airplanes and heavy mobile artillery for offensive operations. And finally, having spent many years and a considerable portion of the defense budget in the construction of a strong line of defenses, it appeared reasonable that the war should be fought in those fortifications rather than waste millions of lives in costly offensives.

The French and British high commands agreed therefore to adopt a defensive attitude and wage a war of attri-

tion in which the British Navy would play a leading role and keep Germany blockaded. While the British Navy, aided by the French fleet, was attempting to keep supplies from getting into Germany, the French army aided by the B.E.F., was to keep the Germans out of France and away from the Channel. The fortifications along the French frontier were to be the main line of resistance unless the Germans came through the Low Countries, in which case British and French forces from the left would swing into positions along the Meuse River in Belgium.

OPERATIONS IN HOLLAND

(See Map No. 2)

That German troops were heavily concentrated opposite the frontiers of Holland, Belgium and Luxembourg on 10 May was, of course, a fact that could not be concealed from their enemies. That an invasion of the Low Countries was imminent was possible as well as probable. However, the exact date and hour of the invasion were a secret that was not revealed until the order to move was given by Hitler. The Germans, by frequent shifting of troops in rear areas, had attempted to keep their enemies guessing as to their plans. Troops had been concentrated opposite Holland and Belgium on previous occasions without subsequent activity. The result was that, while the Allied forces were not unprepared for the German attack, the Nazis were favored by the element of surprise which at the same time gave them the initiative that was never relinquished. That the British and French troops were prepared for the German invasion is evidenced by the fact that the French First, Seventh, and Ninth Armies and the B.E.F. were moving into Belgium within two hours of the German attack.

The invasion of the Low Countries the morning of 10 May followed closely in plan the other Nazi invasions of the past year. Elements of the German air force, preceding and accompanying the ground forces, cleared a path for them by bombing and strafing possible local opposition. Other units of this air force flew more deeply into the invaded territories to blast military objectives in the rear areas or to drop parachutists who seized airports, railroad terminals, administrative and communications buildings and other vital points. This daring form of air action was highly successful in Holland, due probably to the thorough way in which the attack had been planned and the assistance rendered by disguised Germans and Dutch sympathizers.

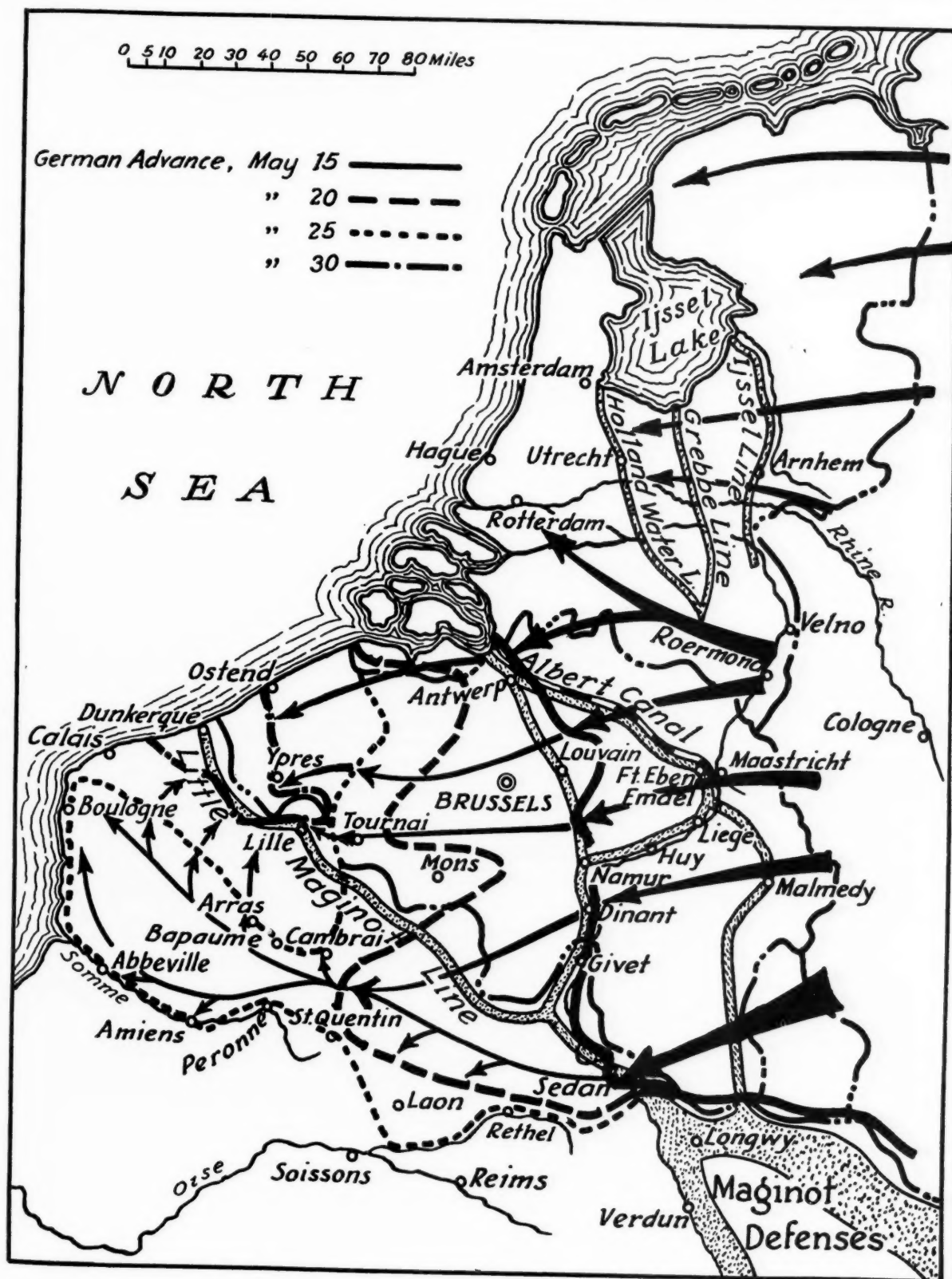
The resistance of the Netherlands to the invaders lasted but four days. German columns, varying in strength, crossed the Dutch frontier early in the morning of 10 May. The northern province of Groningen was quickly overrun, for the Dutch, realizing the impossibility of defending that sector, promptly evacuated troops in that area to the water defense lines. The frontier defenses were likewise abandoned in favor of the IJssel Line. Strong frontal attacks by the Germans broke through this line on 11 May and the Dutch retired to the Grebbe Line about 25 miles to the rear. Two days later they were again forced to withdraw to their final line of resistance running through Utrecht.

Meanwhile the strongest of the German columns, striking through Roermond and Venlo in southeastern Holland toward Rotterdam succeeded in enveloping the southern or

right flank of the Dutch flooded areas. This column reached Rotterdam 14 May and made contact with the air troops who were holding the city. These air troops, estimated at 5,000—probably an air infantry division—had been dropped or landed in the vicinity of Rotterdam on the first day of the

invasion, and had, after three days of strenuous fighting gained control of the airport and most of the city.

The effect of this successful drive to and occupation of Rotterdam was to cut off most of the Dutch forces from their Allies, and in order to avoid further useless bloodshed and



MAP No. 2

destruction to Dutch towns, General Winkelman, Commander in Chief of the Dutch Army, ordered his troops to cease firing 14 May. Scattered resistance by Dutch units in the southwestern province of Zeeland continued a few more days.

BATTLE OF FLANDERS

In the operations in Belgium and northern France, the Nazi invaders made three main efforts: through Maastricht in the southern tip of Holland toward Brussels; through Malmédy toward Dinant; through Luxembourg and southern Belgium into northern France. (See Map No. 2.)

The northernmost of these drives struck at the junction of the Albert Canal and the Meuse River. Fort Eben Emael, protecting this junction, was captured 11 May. Belgian guards at the bridges near this fort were killed before they could carry out their instructions to blow up these bridges in case of an invasion. German infantry and engineers were thus able to infiltrate and storm the fort from the rear as additional troops descending in gliders or parachutes landed inside the perimeter. Unprepared for interior defense, the entire garrison of 1,200 men surrendered. The fall of this fort enabled the invaders to roll up the defenses along the Albert Canal and to push in behind the Meuse River defenses.

Despite the difficult terrain and the numerous fortifications scattered throughout the Ardennes forest, the Belgian defenders were unable to check the central drive of the Nazis toward Dinant. By 14 May German forces had reached the Meuse River from Namur to Givet. French and British troops were preparing to halt the drive along the river between these two points.

The third and strongest of the three drives came across Luxembourg and southern Belgium and struck at Sedan, a weakly fortified area into which the French Ninth Army had been moved. This army, none too well led, felt the full force of a coordinated German attack that involved planes, artillery, tanks and the best of the Nazi storm troops. The German Fourth Army, including 10 mechanized and 6 motorized infantry divisions, is believed to have been used at this point. The French defense fell to pieces under this shock, leaving a pocket across the Meuse into which fresh German divisions moved promptly. The success of this drive was in part due to gross errors and omissions by both the French and Belgians. The Belgians, overestimating the delaying powers of their covering forces in the difficult terrain of the Ardennes, failed to destroy the river bridges; that the bridges across the Meuse in this area were not destroyed by the French remains inexplicable. The French, relying on the defensive strength of the ground and believing a serious hostile attack in so difficult a sector to be unlikely, had sent there indifferently trained and ill-led troops, who moved forward too slowly to anticipate the Germans on the banks of the Meuse. The crossings were forced and the enemy launched at the surprised and unprepared defense a mass of tanks, many of them of a new heavy type impervious to the lighter French antitank weapons. Their advance was supported by swarms of dive bombers working in close cooperation with the ground troops; it was followed by motorcycle machine gunners and motorized infantry units, who quickly consolidated and held the ground over which the

tanks had preceded them. French counterattacks, delivered hurriedly and without adequate preparation, failed to check the tide of invasion, which swept irresistibly on to the heart of northern France.

By 15 May, the Allied forces appeared to have established some semblance of order in their defenses; but the German drives had, by that time, gained a momentum that was not to be checked. In the vicinity of Louvain a thrust was being made toward Brussels. The Belgians, reinforced by the British, had taken positions along the Dyle River where a final effort to protect Brussels and Antwerp was made. Below Namur, the Germans encountered stiff French resistance in their attempts to force crossings of the Meuse. However, between Namur and Dinant they were able to establish bridgeheads and to prepare the way for strong attacks that soon followed.

On 17 May, reinforced by units released from Holland, the German armies launched strong attacks along the entire front from Antwerp to France, special emphasis being placed on the drive against the Belgians on the Allied left flank. The fortified cities of Antwerp and Brussels fell before this German onslaught leaving the German right wing free to move along the channel. Along the Meuse, a breakthrough near Givet enabled the Germans to form with the drive through Sedan, a wedge that completely enveloped the French Ninth Army and pointed toward Amiens and Abbeville.

By 19 May the point of this German wedge in northern France had reached St. Quentin. As the point advanced, the wedge was widened by attacks to the south that reached Rethel, Laon and La Fere. The tip of the wedge was driven forward until on 21 May, Amiens was in German hands and mechanized units were reported in Abbeville at the mouth of the Somme. On the northern flank of this salient the Germans advanced through Le Cateau, Cambrai, Arras to Calais, which was captured by the Nazis on 27 May.

As a result of this salient, the Allied forces in Belgium, estimated at 1,000,000 men, were cut off from supplies and reinforcements, and the Germans immediately turned every effort to the destruction of those forces. The left flank of this salient appeared to be very much exposed. However, it was protected by the Aisne and Somme Rivers, the bridges over which were either seized or destroyed by Nazi units. And the speed of the German advance was so great that the French were unable to bring up and organize their reserves for a blow at this flank before German motorized troops moved in to cover this vulnerable line.

Only twelve miles separated the French forces at Peronne on the south side of the salient from their Allies at Bapaume in the pocket, 27 May. But German bombers prevented a concentration of French forces in that area for a breakthrough and at the same time protected the movement of Nazi motorized troops and weapons to any threatened sector.

By 27 May, the pocket in which the Allied forces were trapped, was in the form of a triangle with one side along the Channel between Calais and Zeebrugge, the opposite angle being at Cambrai. On the eastern side of the triangle the Belgians were holding the line from the coast to Courtrai. When, on the morning of 28 May, King Leopold surrendered himself and his army to the Germans, the

critical situation of the Allies became desperate. The French and British had no other recourse than to evacuate to England as many of their troops as could be saved.

General Jean Blanchard was in command of the remains of the B.E.F. and the French forces, totalling about 400,000, who were forced to evacuate from the pocket that was being relentlessly attacked from all directions by the Nazi forces. The only port of any size left to the Allies was the port of Dunkerque which had been laid in ruins by German bombers. But the French and British were capably assisted by the weather (an opportune fog abetted their cause), by the British and French navies whose guns held off the Germans from Dunkerque, by the Royal Air Force which protected the operations from German air attacks, and by a rear guard of 40,000 men whose equipment and supplies were in no way comparable to those of the enemy.

Within a week, despite all that the Germans could do by land, air and sea, an Allied armada composed of craft of all kinds came to Dunkerque and embarked and carried home all but a small portion of the Allied troops in the pocket. The work of the Royal Air Force in protecting these operations was brilliant. The heroic rear guard which covered the evacuation paid for their gallantry by being taken prisoners of war. Much booty had to be left behind—guns, tanks, vehicles and munitions, much of which, however, was rendered unserviceable to the enemy at the last moment. But over a third of a million men were snatched from the destruction on which the Germans had confidently counted. The success of the Allied evacuation was due to the remarkable cooperation and teamwork of the Allied armed forces—sea, land and air—whose combined efforts made possible a successful withdrawal in the presence of the enemy and one which will go down in history as a classic example of this type of operation.

BATTLE OF FRANCE

The evacuation from Dunkerque brought to a close the "Battle of Flanders." While the Dunkerque operations were going on, every effort was being made by Generalissimo Weygand to strengthen the French defenses for the "Battle of France," inevitable and imminent. The Weygand line extended along the general line of the Aisne and Somme Rivers. To this line were sent all troops that could be spared from the eastern and southeastern frontiers, together with all available artillery and the few tanks that had not been lost in the "Battle of Flanders." Including two British divisions, an equal number of Polish troops, and perhaps half as many Belgians who had refused to surrender with their king, Weygand had on his northern front about 1,000,000 men. Ten divisions were left in Savoy in southeastern France to guard against a simultaneous attack and declaration of war by Italy.

Weygand's defensive system was hurriedly organized in depth, particularly in those sectors favorable to the advance of mechanized and motorized forces. It was calculated to permit the passage through the first lines of the heavier tanks. Then while these vehicles were being pounded by 75's in the rear areas, the forward lines equipped with anti-tank and heavy machine guns would stop the light tanks and motorized columns that usually followed.

Ready for the attack against the Weygand line were forty Nazi divisions plus five mechanized divisions, with an equal number available as soon as the Belgian operations were completed. The Nazis refused to wait for these reinforcements, preferring to launch their new drive before the Allied defenses could be strengthened by reinforcements of hastily constructed fortifications.

On the eve of their new offensive, German bombers raided French airdromes and military centers throughout France, a particularly intensive bombardment being made on Paris. At dawn, 5 June, the day following the occupation of Dunkerque, the Nazi divisions started their drive southward on a 120-mile front extending from the Channel to Laon. The principal objectives of this drive were the Channel ports—Havre in particular—and Paris, and it was toward these cities that the German thrusts were strongest. (See Map No. 3.)

For three days the French defenses held, taking a heavy toll in Nazi tanks and infantry, but losing much of their own matériel in so doing. The Germans, on the other hand, had replacements ready for every man or piece of equipment lost and for every plane that was shot down. On 8 June, the French line began to crack as twenty new divisions were hurled into the Nazi drive on the western half of the line. Mechanized forces broke through and reached a point twenty miles northwest of Rouen, which was entered the next day. This wedge thrust deeply into the French left flank and forced a withdrawal to positions along the Seine and Oise Rivers.

Along their eastern front, the French were slightly more successful in holding the enemy along the Aisne River. However, the pressure of German reinforcements in the Soissons area finally created a new break in the line, and the Aisne River defenses had to be abandoned. A temporary check of the Nazi drive was made at the Ourcq River but by 11 June the French had withdrawn to the Marne.

The following day the Germans advanced toward Paris from the west, the north and the east. The city was forced to surrender 14 June, following a declaration the preceding day that Paris was an "open city." At the same time Havre on the western flank fell to the Nazis and the key fortress of Montmédy on the northern end of the Maginot Line was taken.

From the military point of view the loss of Paris was a very serious blow. Paris was the hub of the railway system of France; it was the center of a great armament industry; it contained valuable stocks which had to be left behind and which would be invaluable to the enemy. Furthermore it provided the Germans with accommodations which they had good reason to suppose would not be bombed from the air. With the fall of Paris the end of the "Battle of France" was in sight.

It was the eighth invasion of France's beautiful capital. Julius Caesar first stormed it in 52 B.C. Clovis, the Frank general, captured it in the fifth century after it had become a Roman outpost, and then the barbarians from the north took it over. The English, under Henry VI, took Paris in 1422, and despite the attempts of Joan of Arc to recapture the city in 1429, it remained in English control until 1643, when the city was restored to the King of France, Charles VII.

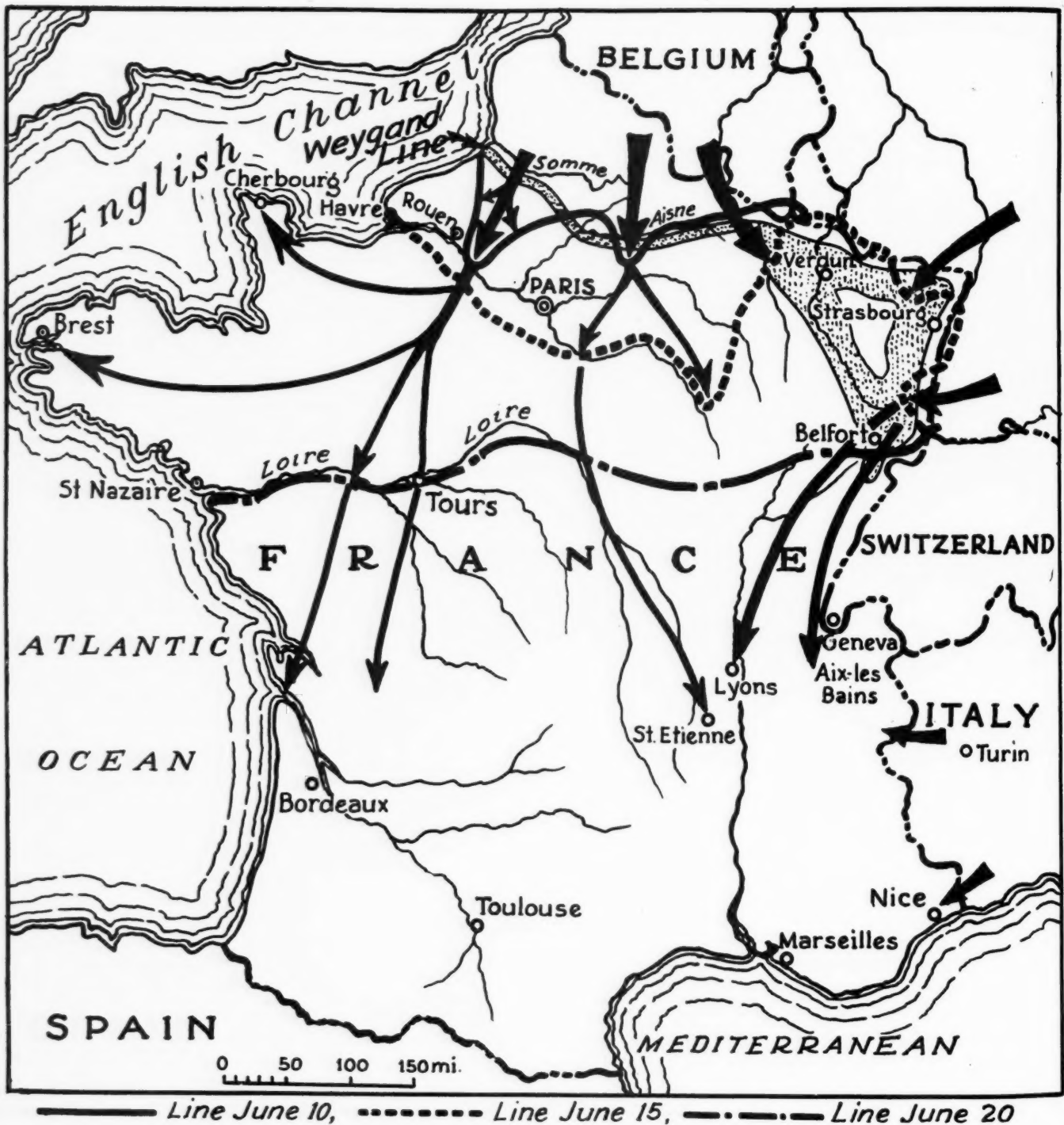
After Napoleon's defeat at Waterloo, the victorious Allied armies entered Paris in July, 1815, and gave the throne of Louis XVIII. Then came the march into Paris by von Moltke's armies after the conclusion of the Franco-Prussian War of 1870-71, a conflict that cost France Alsace-Lorraine and a billion dollars in gold.

The German drives threatened to cut off the troops in the Maginot Line which Generalissimo Weygand hastily evacuated in a hopeless endeavor to make a final stand in positions along the Loire. But the demoralized army was unable to make any coordinated effort against the relentless

pursuit of the German divisions which found their advance unimpeded as a result of the activities of the German air forces that bombed and strafed rear areas at will.

Italy's late entry into the war against France and Great Britain on 10 June was immaterial as far as the defeat of the French was concerned. It merely gave Italy an opportunity to join in the peace discussions for which Marshal Pétain, newly appointed minister, asked 17 June.

Fighting in France continued until 1:35 AM, 25 June, although French opposition consisted of nothing more than isolated defense areas which the Germans either mopped



MAP No. 3

up or passed up. On the coast the Nazis reached the Charente; along the Loire, they were at St. Etienne; in the Rhone valley, Aix-les-Bains was taken.

COMMENTS

The complete picture of the French debacle is not yet available. There are many questions of particular interest to the military student, the answers to which are not clearly known at this time.

Nevertheless, sufficient reliable information is on hand to offer some explanation as to how and why the "best army in the world" was whipped so easily by the German legions.

(1) The French army lacked equipment, particularly airplanes, tanks, antitank guns and heavy guns. German superiority in mechanized equipment and aircraft was outstanding.

(2) French war doctrines and training were distinctly inferior to those of the Germans.

(3) Refugees clogged the roads, interfering seriously with the movements of troops.

(4) The German advance was so rapid that the French command could not function properly for lack of means of communication.

(5) The French High Command was guilty of military bungling as proven by the removal of fifteen generals.

(6) The Germans had been preparing and training their army for years to fight a definite war on a definite terrain at a more or less definite time and had designed new matériel and devised new methods of warfare to carry out their plans. They had singleness of command and singleness of purpose. They had developed the closest teamwork between all components of their armed forces. The work of their intelligence service, ably assisted by an active Fifth Column, was superior, enabling the High Command to obtain accurate information of the enemy at all times. Their service of supply was extremely well handled, while their staff work was bold, extremely dynamic, ingenious and precise. It gambled daringly, even recklessly, but with extraordinary skill.

LESSONS

Some of the vital lessons to be learned from Europe's conflict are as follows:

(1) The idea that a war can be won by a pure defense, or without fighting has been thoroughly exploded.

The Allies entirely underestimated the power of the German attack and overestimated the capabilities of their own defensive measures. The French put too much trust in the Maginot Line, forgetting that a "strong attack is the best defense."

(2) Arms and equipment must be fully abreast of the development of modern science.

Germany, formerly tied by the provisions of the Treaty of Versailles which she repudiated in 1935, made herself free to acquire the most modern armament. Her equipment was new and embodied all the latest improvements, outclassing that of her enemies who had been tagging along with their old matériel, which was insufficient as well as out of date. In addition, the German equipment had been tested in maneuvers and in actual warfare on the battlefields of Spain and Poland.

The Allies did not estimate new engines and new methods of warfare at their true value, and preparations were not made to meet them in case they proved more dangerous than had been anticipated.

(3) The importance of man, paradoxically enough, increases as the machine dominates more and more of the battlefield. As General Fox Conner has so accurately expressed it, "the engineer of a modern express train must be more highly trained and more intelligent than a one-horse plow boy."

(4) *Blitzkrieg* does not owe its success entirely to aviation and mechanized forces alone, but to the powerful backing given to these units by masses of infantry supported by an amount of artillery far beyond the proportions seen heretofore in battle.

There were nine or ten infantry divisions for every mechanized division in the campaign. Infantry continues to have the principal mission of seizing and *holding ground*.

(5) Discipline and morale have not only retained but increased their importance.

The Soviet-Finnish War gave the world an excellent illustration of the power of an efficient, well-trained force. The French Ninth Army at Sedan, on the other hand, presents an illustration of the reaction of a force lacking in discipline and morale when suddenly struck hard by a powerful opponent.

(6) Absolute necessity of close coordination of all branches of the armed services.

This decisive element plus the overwhelming superiority of air power, mechanical equipment, morale and leadership, brought about the unexpected defeat of France.

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Like the manufacturer, the modern soldier must always look for something new and not stay hypnotized by the lessons of the last campaign, but that does not prevent him from giving them some consideration.—General Estienne.

Foreign Military Digests

Digests of articles from foreign military periodicals; other items of interest from foreign publications are summarized in the Catalog of Selected Periodical Articles.

Notes on the Artillery of Mechanized Divisions

["Note sull'artiglieria delle divisioni corazzate," by Brigadier General de Stefanis, translated from *Rivista di Artiglieria e Genio*, May 1940]

CONDENSED BY LIEUTENANT COLONEL E. M. BENITEZ, *Coast Artillery Corps*

One of the decisive factors in the success of the German operations on the Polish front was, as we know, the employment of mechanized divisions.

These units, according to the most reliable reports, consist of: 1 reconnaissance battalion; 1 mechanized brigade of two tank regiments; 1 brigade of motorized infantry; 1 regiment of motorized artillery; 1 antitank battalion; 1 motorized battalion of pioneers and 1 column of pontoniers; 1 motorized signal battalion, with a total of 81 machine rifles, 14 grenade throwers of 50-mm and 2 of 150-mm; 444 tanks (152 medium and 292 light); 50 armored cars, 24 105-mm guns, 48 37-mm guns and 12 20-mm antiaircraft guns. These divisions were launched through gaps opened in the Polish line and, taking advantage of their speed and power, hurled themselves deep into enemy territory for the purpose of attacking the enemy in rear or in order to prevent the crossing of large streams well behind the enemy's lines.

The creation of mechanized units in modern armies has raised some vexing problems concerning their organization, the handling of a large number of vehicles, the maneuvering on the tactical field of the imposing assault mass made up of so many tanks of such varying types, and the artillery.

Let us discuss briefly the artillery problem in its fundamental aspects.

The artillery of a mechanized division must normally operate against the following objectives:

- Observation posts, for the purpose of blinding and destroying them.
- Passive obstacles and mine fields, for the purpose of eliminating them.
- Antitank weapons, for the purpose of neutralizing and, if possible, destroying them.
- Hostile tanks, for the purpose of stopping them.
- Units of cavalry or rapid infantry, for the purpose of stopping or neutralizing them.
- Small or medium caliber artillery for the purpose of neutralizing it.

The action against antitank weapons and tanks, as a rule, can be carried out effectively at short ranges only,

because these targets either disclose themselves at the last moment, or because they present a very resistant and highly mobile target. The other objectives mentioned above, by their nature and their behavior on the tactical field, require the employment of great rapidity of fire, precision, power and flexibility.

Said artillery should, therefore, consist of the following materiel:

(1) A self-propelled track-laying carriage permitting of maximum speeds on the road and mobility in broken terrain greater than that of the tanks with which it must cooperate so as to be able to advance by bounds, during combat, for action at the most effective ranges; it should have all-around traverse, which can be accomplished by an armored turret or with an installation open at the top but protected on the front, sides and rear, and suitable for prompt action in all directions.

(2) A gun of 75-mm caliber or more, with semi-automatic breech mechanism, firing armor-piercing and high explosive shell having a high percentage of smoke-producing material, and great piercing power at short ranges with a minimum dispersion at medium ranges.

That these types can be constructed has been demonstrated by the constructions in France, although they are intended for a different purpose: the light tank Renault N. C. 27/31, with a 75-mm gun (short) in turret (weight 7.9 tons); the medium tank Renault 22/23 with a 75-mm gun in casemate (weight 13 tons); the medium tank Mod. 30 with one 37-mm and one 75-mm gun in the turret (weight 25 tons); the heavy tank 2-C, equipped with one 155-mm howitzer and one 75-mm gun (weight 70 tons), and the Russian heavy tank Mod. 11 which has one 75-mm automatic gun and two 37's in three separate turrets (weight, 36 tons).

Of the two types of installation—turret and open—the turret type proves to be better adapted to individual actions at very short ranges, but it could also be adopted for batteries of 4 or 6 pieces whenever the tank can be provided with a suitable radio station, and each battery with appropriate fire control. The open type, on the other hand, is more suitable to artillery requirements in general and lends itself

particularly well to the artillery requirements of mechanized divisions.

At present, we find in the organization of mechanized units in almost all armies, tanks armed with guns to be employed individually by direct laying and at very short ranges, and also motorized normal artillery organized in batteries, battalions and regiments.

The employment of this latter type of artillery naturally does not differ essentially from that of the artillery of the normal divisions; but its actual use is greatly influenced by two main factors: the time available for preparing and developing the different actions, which almost always is very short, and the nature of the objectives, some of which are normally fleeting, almost invisible and extremely mobile, while others have a particular intrinsic constitution and require special means of combating them.

As a result, it is normal for the artillery of mechanized divisions to intervene rapidly and on its own initiative; changes of objectives are unforeseen and continuous, while it becomes necessary to change positions frequently due to the difficulties encountered in emplacing and the desirability to function with efficiency, security and maintenance of liaison—radio inclusive—in the advanced zone in which the aforesaid artillery operates.

Ground observation, accordingly, acquires preeminent value, to such a degree as to require the subordination to it of all the operations which precede the entry into action of the batteries and all the acts which lead to the further development of the action itself.

Thus, in reconnaissance, absolute priority should be given to the search for observation posts, from which all the terrain which the tank units are to traverse prior to reaching the final objectives assigned them may be observed. But since in practice this condition is very hard to realize, in view also of the depth of penetration which a mechanized division is capable of attaining, we are faced with the constant and absolute necessity of anticipating measures for the movements of observation posts in order to assure their prompt functioning immediately in rear of the tank units.

Well adapted to this purpose are observation tanks, appropriately designed and provided with radio and with the necessary means for sketching and for observation; or else patrol elements in small armored vehicles or on motorcycles, which likewise are provided with the means for sketching, liaison and observation.

Having selected the observation posts, positions are sought in the immediate vicinity of those posts, since the tendency is to provide the possibility of commanding the batteries by verbal orders, which assures their quickest and surest intervention in the unexpected and sudden changes of the special combat.

The preeminence acquired by ground observation does not, however, exclude aerial observation, which is useful to the tank commanders and to the artillery commander for the purpose of forming a concrete idea of the terrain of attack and of the possibilities offered the artillery in the matter of selection of positions and the displacements of the battalions; it is indispensable for locating and firing upon hostile artillery, upon reinforcements coming up, assembly zones and assembly points or starting positions of hostile tanks. Nor does it exclude the previous understandings, which must be

minute, complete and precise, based on the examination of the terrain, which is carried out by the ground observation posts but more frequently by the aerial observers, and by study of the photographs taken by the observation flights, in which, more than is the practice in the case of the normal large units, airplanes are kept directly and permanently in liaison with the artillery commander of the mechanized division.

Selection of the observation posts and search for the positions, as well as coordination between action of the tank units and action of the artillery, are greatly facilitated by fixing beforehand *reference lines*, called also *lines of objectives* when they happen to be actually occupied by the enemy.

Such lines, made up in general of a succession of localities or of characteristic points of the terrain or of heights suitably oriented with respect to the direction of attack, are determined by the commanders of the mechanized divisions depending on the information which such commanders possess regarding the enemy and on the possibilities offered by the intervening terrain for direct observation of the artillery.

Such determination, though usually possible whenever a mechanized division is employed in completing the tactical success, is not always practicable during the exploitation of the success, when the division is launched with a broad sweeping movement against the flank or the rear of the hostile position, which is hemmed in on the front by large units of normal composition.

However, in order that the artillery of the mechanized division be capable of entering effectively into action in the restricted limits of time available for the organization of the attack, it is very important that, during the great movements, the eyes and brains of the arm—that is, patrols and command—be protected far forward and that the remaining elements be echeloned in great depth.

In this way, the artillery reconnaissance detachments, sent by the division artillery command immediately behind the motorcycle security detachments, can study the special conditions for the deployment of the battalions in the zone or zones contemplated for the entry into action of the mechanized division or in those zones which might be imposed by contingent situations. These detachments can also collect timely information regarding the enemy and the terrain and transmit it, by means of radio or motorcyclists, to the commanding officer. Thus, the commander properly oriented, is in a position to take appropriate measures for the deployment of the battalions, if the mechanized division acts independently, or to harmonize the order of battle with that of the artillery already in action if the division is assigned to support or to function within the framework of other large units (completion of the success, or pursuit in cooperation with large rapid or motorized units). In these two latter cases, the earliest possible contact between the artillery commander and the commanders of the artillery units in position enables the former to make a more accurate estimate of the possibilities of the artillery units in action. He is in a better position to make a decision as to how to render more effectively the assistance requested as well as a more intelligent assignment of initial tasks to his own artillery units in order to further the intentions of the division commander.

The echelonment in depth of the batteries and of the pertinent organs of supply, enables the mechanized division commander to make adequate provision for the most varied requirements.

The entry into action of the tank units is almost always facilitated by an artillery preparation.

In the mechanized units this preparation assumes a particular character. It is not a complicated or minutely prearranged action carried out in advance of the breakthrough of the tank units, but an action which is brief, violent and launched simultaneously with the beginning of the tank movement from the line of departure. It is directed against the antitank arms, the mass of enemy fire centers and any enemy batteries which may have disclosed their position during and after the establishment of contact or which in any way may exert action along the axis or axes of attack.

This preparation is participated in by all the organic artillery units of the mechanized division and by any artillery units assigned to reinforce it, and it is rapidly organized by the division artillery commander with the advice of the commanders of the tank units.

The artillery preparation assumes greater magnitude whenever the mechanized division—called upon to complete tactical success—is to operate within the framework of other large units already in place. This case requires the participation of all the corps and army artillery units whose action is more effective in the sector of attack assigned to the mechanized division, while the organic artillery of this division comes into action in the final phase, that is, the one which shortly precedes the jump-off of the tanks from the line of departure.

When the preparation has been completed, mechanized division artillery forthwith initiates the support, so as to eliminate those active obstacles which may impede the advance of the tanks. It operates against antitank arms which will enter into action in ever increasing numbers with the progress of the attack waves of enemy tanks launched to stop our advanced tanks. It also operates against hostile infantry which, with the support of other waves of enemy tanks, will try to engage the fast tanks of the mechanized division in order to stop them and isolate them from their tank units.

The organization of these fires has varied characteristics, depending on whether or not it has been possible to establish reference lines or lines of objectives. In the first case, the support is effected by means of fire actions applied to the different lines, mainly in relation to the axes of attack of the tank battalions and passing successively from one line to another in accordance with the rate of advance of the tanks; in the second case, it takes the form of successive concentrations on the terrain astride these axes, the fires being lifted by bounds proportional to the speed of the most advanced tanks.

The application of such complex procedures confirms the indispensability of direct observation of the terrain of attack and consequently the necessity of assuring it in advance and of maintaining it at any cost throughout the action.

The availability of observation tanks would provide great possibilities and valuable assistance. Lacking them,

reliance is placed upon the ardor, the intelligence and the spirit of sacrifice of the observation and liaison patrols for assuring the rapid movements of the observation posts. The preparatory measures in this respect are never sufficiently minute.

The attack of the mechanized division is always oriented in depth because it must tend to reach the zone of deployment of the hostile artillery for the purpose of destroying it and it must beat the enemy to rearward positions where he might take another stand, or which might be suitable for facilitating the debouchment and penetration of large rapid or motorized units.

Consequently, after a certain time, the combat assumes an increasingly rapid rate of progress, while the objectives become increasingly sparse.

The artillery support is then assured at first by the battalion commanders and later by the commanders of the individual batteries, who, previously advised regarding the final objectives to be attained, the axes of attack and the maneuver of the tank units, act on their own initiative. They are supervised in so far as possible by the battalion commanders who provide for liaison and for timely displacement of the organs of supply in order to guarantee prompt replenishment of ammunition.

The final objectives having been won or reached, the tank units halt for the purpose of reorganizing, refueling and preparing for further employment, while the rapid units included in the composition of the mechanized division generally continue the pursuit in accordance with methods presented by the division commander and within well-defined limits of space.

In this final phase of the combat, the artillery commander, after having attached some element (section or battery) to the rapid units in pursuit, promptly reorganizes again the organic battalions and with them takes measures for laying down a barrage in front of the localities in which the tanks assemble and for interdiction along the lines of communication which are most important or most dangerous.

The replenishment of munitions in the mechanized division almost always presents very serious difficulties, whether because of the rapid rhythm with which the combat unfolds, or because the action is constantly mobile, or finally because the motorized ammunition columns are often obliged to cover long distances on itineraries poorly organized and little protected.

It follows that the batteries must usually rely exclusively upon the unit allowances (combat train), a circumstance which makes it advisable, whenever possible, to establish near the pieces, at the beginning of each action, a supply of ammunition on the ground, corresponding to the predictable consumption for the preparation and first phase of the attack.

The first replenishment—namely, the one corresponding to our front line supply columns—being frequently obliged to meet needs which are imperious and sometimes tragic, is normally pushed far forward and for this reason it is entrusted to selected personnel noted for a high spirit of co-operation and for great daring.

Finally, the medium in which the mechanized divisions normally operate and the particular method of action make

it indispensable that only a minimum of security to the artillery of such divisions be provided.

In large displacements, therefore, in addition to the service for which measures are taken by the division or column commander, each artillery unit must provide for its own security by means of small patrols, well commanded, preferably on motorcycles, and charged essentially with giving the alarm; and in case of attack each unit must defend itself by means of its individual arms, machine guns and at times, by using one or more pieces of artillery.

During combat, on the other hand, the necessary security must be provided by a suitable detachment. The commander of this escort, constantly advised regarding the order of battle of the units to which his detail is assigned—in general, the battalion—and regarding successive displacements of these elements, moves about at proper times, directing his attention especially to the hostile fire centers which have remained effective after the passage of the tank units and which must forthwith be fired upon or annihilated.

The escorts are in general furnished by the motorized troops which form an organic part of the mechanized divisions, and their commanders are responsible, for the measures adopted, to the commanders of the units to whom they are subordinated.

Having set forth the most characteristic principles of employment of the artillery of mechanized divisions, the following deductions seem natural and logical:

First of all, these artillery units must be considered a *specialty in themselves*, for they are called upon to operate in situations and with methods which are quite different from normal artillery.

As a specialty, they must have officers and soldiers who respond to definite requirements. They must be men physically robust (displacement of the pieces by hand must be regarded as normal), professionally well posted and mentally ever prepared.

In order to obtain such results, it is indispensable that they be thoroughly trained in their own arm and in teamwork. Consequently, mechanized divisions should be stationed normally in terrain suitable to their employment and the units of the division should be so stationed as to permit the maximum contact between tank and artillery units.

Tactical and technical training and, above all, mental preparation require the maximum of stability in the commanders, in noncommissioned officers and in the specialists, and require, even in time of peace, an organization equal to or fairly close to that required in war.

For the specialists, we need longer terms of enlistment and consequently higher rates of pay than the normal ones.

Finally, the equipment of the commands and subordinate units must be suitable to its special employment, that is, perfect in quality and reduced in quantity. It must be capable of acting, at any moment, with confidence, promptness and efficiency.

Reflections on War

["Réflexions sur la guerre," by General Bineau. Translated from the French by Lieut. Colonel R. U. Nicholas, Army War College, Washington, D.C., from *Revue des Questions de Défense Nationale*, July 1939.]

CONDENSED BY CAPTAIN M. R. KAMMERER, *Infantry*

There are few branches of human learning on which intelligent people show themselves so inexactly informed as on questions of national defense. This insufficient knowledge of a subject about which everyone should have some basic conceptions, simple but accurate, may be attributed to the complexity of the problem and, to the confusion and lack of classification of the questions raised.

It must also be said that there exists no work which treats the subject in a general way. The few authors who have attempted it make difficult reading for the uninitiated. On the other hand, books of military history, maneuver regulations, essays on tactics, outlines of strategy, form an abundant literature. But these are only fragmentary studies and their perusal can be truly profitable only if a general perspective allows them to be linked together and fitted into the whole.

It might be added that, without suspecting it, military men employ a language that is sometimes a sealed book, and that their readers adopt it but often fail to apply it to the same subjects, which is certain to inject still more confusion into their minds.

The present article is simply an attempt to clarify the military problem by offering a sort of classification of the

factors which influence it. One cannot understand this problem unless he studies its social and moral aspects to which uninitiated persons never lend the exceptional attention that they deserve.

I. THE SOCIAL FACTOR

"War," said Clausewitz, "is born and takes its form out of the ideas, conceptions and relations that exist when it comes."

Human society having undergone a steady modification through the ages, its social phenomenon par excellence—war—should naturally have been affected by the evolution of such society. Thence arises the infinite diversity that we meet when we undertake its study. A careful study of the history of Europe would confirm this statement. It would show that war follows the evolution of society and varies in its nature according to the political and financial situation, the rights to be defended and the claims put forth, the passions and the special characteristics of peoples. These data present to us the problem of war in its social aspect, an aspect which reflects the distorted face of the political and social situation at the moment. It must be so, if we are to

believe Clausewitz when he states that "war is the continuation of politics with other means." Peace and war are today even less separable than they were in the days of Clausewitz. Both are forms of the same combat delivered by a nation for the satisfaction of its ambitions or for its mere existence.

It will be noted, in a study of European history, that the part taken by the people themselves in military struggles increased steadily. During the feudal regime they merely assisted the nobles in the fighting; in the period of the Capetian Monarchy in France they participated as though in spite of themselves in the struggles between sovereigns; at the close of the eighteenth century their own passions caused them to take an increasingly personal part.

That growing influence of public opinion in war required that the people understand the motive for which they were fighting, whether they have a general feeling that they are struggling in a just cause or for their own rights, or whether they be made to distinguish some advantage or other. And here a new element intervened. If the people do not spontaneously draw from their own makeup the passions for arousing them in the conflict, propaganda is going to exert its power on their minds by inculcating in the masses a certain number of foolish passion-thoughts, often without logic but designed above all to captivate minds and bring them to a hypnotic state. Such is the redoubtable new factor which, thanks to modern means of propaganda—radio, moving pictures, newspapers—makes it possible to instill in the people the ideas appropriate to the end sought.

The artificial realization of an emotional and sentimental state thus facilitates aggressive projects and confers upon the social element an even greater role than heretofore in the planning and conduct of war.

II. THE MORAL FACTOR

If there is one characteristic of war that sets it apart among the manifestations of human activity, it is its moral side. For it brings into play passions which antedate the conflict and which are intensified during its course. And war develops in an atmosphere of constant danger, where there reigns at all times an uncertainty under which action requires the moral strength, the will power, that is known as character.

Modern armies are to be distinguished from their predecessors especially by their nature as citizen armies and by the ever increasing number of combatants. In order that this mobilized mass may not degenerate into an unorganized crowd, following severe tests to which they may suddenly be submitted, they require something more than individual heroism. War of the people demands collective virtues. It is the function of the army to instruct them therein.

One of the means possessed by the army is discipline, which constitutes the chief strength of armies. That discipline should be repeatedly clarified, enlivened, rendered human in all echelons by the commander. It is through his deep knowledge of men, through the atmosphere of confidence, sincerity and disinterestedness that surrounds him, that the commander makes felt that personal influence which unites "souls in danger." The high worth of the commander, the unshakeable firmness and devotion of the officer cadre are indispensable factors now that the citizen-soldier, who supplanted the professional soldier, is apt to find himself

abruptly exposed to the most terrible nervous tension that man is called upon to undergo.

But, owing to the development of matériel and particularly of aviation, this atmosphere of danger and uncertainty now tends to encompass not only the soldiers but the entire country. Thus arises the growing importance of the moral preparation of the nation. This moral education finds a natural basis in a serious, deep and sober national sentiment, the source of the spirit of unity represented by the conception of *Country*.

A new characteristic of modern war is then the capital importance attached to the maintenance of high morale in an entire nation exposed to serious danger in time of war. The maintenance of high morale becomes increasingly important as well as increasingly difficult due to the possibilities of enemy press and radio campaigns and to the insidious infiltrations that recent events have thrust before our eyes. These campaigns against morale may bring results comparable to those of war if they are supported by a display of material strength. They constitute a new form of conflict in which the moral factor is almost the only one involved.

The social situation and the moral condition of a people thus compose the framework on which war is fought, whether voluntary or forced war, whether aggression or defense. That is why it is of such importance for each nation to be prepared constantly, through its unweakening unity, its unbroken cohesion, its high morale, to meet danger. This truth is amply illustrated with examples that may be taken at will from recent history or current events.

Is war an art or a science? This question has often been debated. Napoleon said: "War is an art in which the execution is everything." Much more recently Marshal Foch declared: "War is an altogether new art, governed indeed by unchanging basic truths, but also by technical progress and by conditions as to the employment of weapons, particularly air weapons."

Actually war is both an art and a science. It is an art in that it is based on rather general time-defying principles and in that it requires special talents of the highest order; but it is equally a science in that it employs the most diverse material means and demands of those who practice it a technical knowledge which must increase proportionately with the development of mechanical apparatus.

"Strategy and tactics together," said Marshal Pétain, "constitute the military art and science. Strategy includes more particularly the plan of operations and the arrangements to be anticipated and carried out in order to bring the troops into the hostile presence. The conduct of combat lies in the domain of tactics, which combines the several arms on the field of battle."

It seems logical, therefore, to divide the study of war into two parts: one of material nature, which includes in particular a task of acquisition; the other of a mental nature, composed especially of thought and reflection.

III. MILITARY SCIENCE—TACTICS

It must be evident to all that, with the passage of time, conflicts between nations have continued to broaden both in their violence and in the number of combatants engaged.

And this phenomenon, which cannot be imputed to the social and moral factors alone, causes us to realize the permanent influence of an evolution factor, that is, a purely material factor.

Great and continual transformations of warfare are due to the development, not only of weapons, but more generally of all material that can be applied to military ends. There has seldom been a sudden change; continuity has been almost the rule from the Middle Ages to the beginning of the twentieth century. But in the early years of the twentieth century, the considerable increase in fire-power, owing to automatic weapons, marks the beginning of a brusque evolution, related to the rapid progress of science and industry, a change which was further accentuated during the War of 1914-1918.

Besides this development of weapons, discoveries of all sorts connected with war have been constantly exploited to its advantages. The developments of railroads and motor transport have permitted the rapid concentration and the supply of the large armies of today. On the other hand, means for the rapid transmission of thought—telegraph, telephone, radio—have made possible the exercise of command from a distance over masses which otherwise would have been incapable of any maneuver as a whole.

Thus the technical progress applicable to war stamps the latter with an increasingly marked character of a war of matériel. And the military man, whatever his talent, is primarily dependent upon material considerations.

At the foundation of the army there is the soldier who should know thoroughly the weapon and the employment of the weapon that is placed in his hands. At the foundation there is thus the *profession*. And there is no substantial army without that elementary science. Today, it is true, work by crews has almost completely supplanted individual work; but this group or crew, depending upon the matériel used, possesses a unity and a reason for being because of its principal weapon—machine gun, gun, tank or plane.

In preparing for battle, there must be a harmonious employment of the numerous and greatly diversified materials furnished by industry. That combination begins within what we call the principal arms—infantry, cavalry, artillery, engineers—which possess a diversity of matériel, more or less mobile, of flat or curved trajectory, of mass or repeating effect, of long, medium, or short range, etc.

The combination which aims at the maximum effectiveness is what we call *tactics of the arm*.

But, starting with the division, the lowest large unit which organically includes all arms except air, the commander should coordinate the employment of the matériel of these arms, which present basic differences in their qualities. That combination of effect of the several arms, the scope of which is ever widening, receives the name of *general tactics* or combined employment of the several arms; this employment is based essentially on characteristics of fire and is intended to gain, in the offense as well as in the defense, a superiority of fire over the enemy. Tactical maneuver is therefore in essence a maneuver of fires. And it should be evident that tactics or tactical maneuvers will change as the matériel and its mobility change.

It is this matériel and its use that our soldiers are taught during their army careers and it is the constructive and solid

part of warfare. It is that which is procured and developed by the assiduous labors of factories and troops. It is that which justifies both testing laboratories and testing boards and the numerous schools for young officers, as well as the courses in which officers are familiarized with new matériel, its employment and combination.

But while this is the visible and positive part of war, it is not all of war; the elect of the country ought to know that there is something less changeable because it obeys general laws. This other thing is called by some the art of war, and by others strategy.

IV. THE ART OF WAR—STRATEGY

In studying military campaigns, we are inspired, not so much by the brutal shock of two masses of men, as by the series of masterly operations which unfold in a strict order and with a harmonious continuity. The campaigns of great captains are comparable to works of art. Their talents, when occasion arose, were able to dominate and control events.

Strategy can rise to the height of a great art, and peoples are well aware of this; for history has inscribed the names of great captains among the great men of all time. Contrary proof may be found in the beginning of the Franco-Prussian War of 1870 in which the French army, representing an excellent tactical instrument of that day, remained lifeless because of the insufficient merit of its high command.

The art of war, like any of the liberal arts, has its principles. According to Napoleon: "The principles of war are what guided the great captains whose exploits history has given us." Marshal Bugeaud wrote: "There are not many absolute principles, but some do exist."

It must be emphasized, however, that a theoretical knowledge of the principles of war is less important than the application of these principles. As Napoleon said: "War is a simple art in which the execution is everything." And Marshal Foch has written: "In war deeds take precedence over ideas, actions over words, execution over theory."

Strategy consists essentially of moving and disposing troops, whether for the offensive or the defensive, in such a manner as to ultimately bring about the destruction or at least the collapse of the enemy. Strategy has available as means *Maneuver*, while its domain will be the entire *Theater of Operations* whatever its extent; and we here grasp readily its distinction from tactics which is based on *Fire* with the *Battlefield* as its domain.

The few principles that we shall cite lie in a plane sufficiently high and general to endure regardless of the changes wrought in means by the passage of time.

The first, which may be called the principle of the *Initiative*, teaches us that we should seek to impose our will on the enemy through the action of the bulk of our forces under the most favorable conditions of time and space. This principle, which might also be called the principle of dynamism or of force, is given application through the constitution and action of mass forces which implement the will to act. The initiative is first crystallized by a tactical victory, which alone will make it possible to impose one's will on the enemy.

The second principle, which one may call the principle of *Security*, is a principle of conservation. It may be de-

fined as the preparation and preservation of one's freedom of action and the maintenance of one's will against that of the enemy. This principle is characterized by the employment of elements, in the broadest sense of the word, detached from the main body with the mission of providing it with information and of covering it, profiting generally from the temporary advantage of a defensive attitude.

The principle of *Economy of Force* is an indispensable complement to the two preceding ones. It invites us to allot our forces among the several missions resulting from the application of the first two principles, in accordance with the rules of a strict economy. We devote the maximum possible to the main mission and seek to obtain the greatest effectiveness of all elements.

The application of these three principles constitutes the very essence of maneuver. To maneuver is to bring about combinations of effort and concentrations of forces opportunistically, corresponding in space and direction to the objectives contemplated. These concentrations may be achieved as under Napoleon by a convergence of directions or as at present by the commitment of new forces in directions already exploited.

In the execution of a maneuver, the influence of the leader may be summed up in three actions. The first, supported by analysis, consists of working himself into the exact situation; for an operation in war is never isolated in time and space, and it partakes of the general situation of which it forms a part. As Marshal Foch has characterized it: "First, be thoroughly informed."

The second act consists of *issuing his battle order*. From lifelong preparation, from a very detailed analysis of the ex-

isting situation, there results a synthesis from which springs the decision or, in other words, a choice among the types of operations required of the troops. The commander thus capitalizes in one moment the full fruit of his natural ability, the experience acquired during his life and the work of analyzing the problem with which he is currently confronted.

The third action of the commander, taken after his decision has been made, is to *conduct the operation* by remaining set in his will, despite all the obstacles that are going to beset him.

In conducting the operation, the wise commander will take full advantage of the scientific developments in the field of war, he will employ all available matériel profitably; at the same time he will not expect from science and matériel a system of organization which would seem to nullify the earlier humanist discipline that has proved its worth during so many centuries. He will realize that the military art is the one art that is not adapted to type- or key-solutions. For there are too many unforeseen circumstances, too many imponderables, too many unknowns that introduce themselves into the data of military problems. He will have to be a man of foresight in order to maintain the harmony and continuity that govern in the case of superior performances.

War then is based upon social, moral, material and intellectual elements. These factors are the very essence of a nation's power factors. None of them may be sacrificed at any time to any of the others, for its failure would be fatal to the sum total, as the failure of a vital organ is fatal to man. From their close merging is forged the indestructible military power of a country.

Antiaircraft Defense at Night

[From an article by Major I. Grechkosy, in *Krasnaya Zvezda*, 17 July 1939. Translated from the Russian in the Historical Section, the Army War College, Washington, D.C.]

CONDENSED BY LIEUTENANT COLONEL E. M. BENITEZ, *Coast Artillery Corps*

The antiaircraft defense of objectives at night involves a number of special features. Sometimes it is difficult to locate the enemy at night or even to spot him with the aid of observation devices. The action of friendly pursuit aviation is greatly restricted.

The danger of sudden hostile aerial attack is greatly increased at night. At the same time, antiaircraft weapons, unless supported by searchlights, have little effectiveness. It is therefore essential to have sufficient searchlights for the establishment of an illuminated zone, as well as sound ranging equipment, in order to determine and indicate the position of the hostile aircraft.

How is the pursuit aviation to be utilized at night and how is its effectiveness to be insured? First of all, the personnel must be thoroughly trained in the functions involved. Pilots must be able to fly within searchlight beams, to fire on illuminated targets, while maintaining themselves within the designated zone. In order to insure the successful action of pursuit craft at night use may be made of various

means to facilitate orientation—such as specially located searchlights, various light signals, etc. The utilization of pursuit craft at night calls for a well equipped airdrome system, with airdromes located near the zone of action of the pursuit craft.

At night, pursuit craft may be employed in relays to patrol the air, or the pursuit planes may be maintained in readiness at airdromes to take off upon signal. Some foreign armies maintain continuous patrol in the air on maneuvers. The principle involved is as follows: A number of air zones are established in the direction where hostile aircraft are more likely to put in an appearance, and single planes are designated to patrol these zones. Each airplane is assigned a special zone as to altitude. For example, one plane is assigned an altitude of 11,500 feet; another plane, of 13,000 feet; a third, of 14,700 feet. The airplanes proceed to their respective zones and remain there for a designated period of time, at the expiration of which they return to their airdromes. Each airplane attacks targets only

within its own zone. On the whole, zones are established so as to cover probable directions of flight of hostile aircraft either to the protected objective or beyond it.

Another method in the employment of pursuit aviation at night is the following: Airplanes are maintained at the airfield in combat readiness. When the air alarm signal is given, each plane proceeds by the shortest route to its respective zone; it seeks out the enemy there and remains within its zone until the receipt of the signal for landing or until the expiration of a previously agreed period of time.

Antiaircraft artillery is capable of inflicting severe damage upon hostile aircraft. By the close of the World War (1914-1918) antiaircraft artillery already constituted a potent weapon against aerial attacks.

During night operations, antiaircraft artillery is, of course, also confronted by many difficulties. For example, it cannot conceal from the enemy the flash of discharged weapons which discloses the positions of the firing pieces. Coordinated action with pursuit aviation is practically impossible. Barrage fire at night has little effectiveness. The enemy may be discovered by the noise of his motor, but this will hardly indicate the direction of his flight. Obtaining the primary data necessary to calculate the altitude of flight, offers difficulties. It is also difficult to determine the number of hostile craft when more than three airplanes are in the air. Hence, where no searchlights are available, the fire action may be conducted only by means of creeping barrage or fixed barrage.

More effective fire at night is obtained by the utilization of sound ranging equipment, which indicates more accurately the direction of flight of the airplane. With the aid of sound locators it is likewise possible to determine the altitudes of flight. This is why the outer ring of observation posts of the antiaircraft artillery must be equipped with sound ranging equipment. It is best to utilize special batteries for the purpose of indicating air targets. Their guns point out the targets by their fire, while the rest of the antiaircraft batteries may readily observe the bursts.

Balloons are an important means of antiaircraft defense. They were employed during the World War—first, in the defense of Venice and later in the defense of London and Paris. The modern captive balloons are capable of ascending 19,500 feet. Views with respect to their utilization, however, vary.

It is generally recognized that captive balloons are more effective in defense against aircraft at night, or in cloudy weather. But there are those who contend that the difference between the ceiling of the obstruction balloon and that of the modern bomber is so great as to render the balloon quite useless. In our opinion, this is erroneous. Protection by captive balloons, even when only raised to a height of 16,500 feet at night, will prove quite effective against aerial attacks. Bombardment from an altitude in excess of 16,500 feet at night at the present time is quite a difficult undertaking.

Obstruction balloons may compel the enemy to fly higher, which will decrease the effectiveness of his bombardment, facilitate the action of friendly antiaircraft artillery, prevent the enemy from neutralizing the antiaircraft bat-

teries, and complicate any power-diving action on the part of hostile bombers.

By restricting the zones of action of the hostile bombers as to altitude and direction, the captive balloons aid their own pursuit craft in meeting the hostile bombers.

The following methods are utilized abroad in the employment of balloons for the defense of objectives against hostile aerial attack:

(a) Captive balloons are arranged around the defended point, with certain intervals between balloons.

(b) Balloons are equally distributed throughout the defended area, or

(c) A combination of these two methods is employed.

Balloons are placed at intervals of about 300 feet around the objective. It is assumed that the protection of cities like London or Paris requires about 1,100 balloons. Under such conditions, it is believed that fifty per cent of the hostile bombers, with a wingspread of over 25 yards, will become entangled in the balloon cables.

For the defense of London, 600 balloons are distributed throughout the defended areas. The chances of entanglement of the airplanes by balloon cables are here increased somewhat. Moreover, it is assumed that this distribution of balloons will preclude any power-diving on the part of the hostile bombers. The difficulty involved in this method, in the case of large cities, is the usual lack of sufficient suitable space for the proper establishment of the captive balloons on the ground.

A combination of the two methods in the employment of the balloons is more practical, but involves the difficulty of effecting changes in the position of established balloons.

A basic problem in the employment of obstruction balloons is the decision as to when these balloons are to be raised. Twenty to thirty minutes are required to raise them. In the defense of objectives at night it will hardly be possible to receive warning of the approach of hostile aircraft more than twenty or thirty minutes in advance. Hence the conclusion suggests itself that the obstruction balloons should be maintained in the air and lowered in exceptional instances only.

A few words on the importance of searchlights. Their primary mission at night is that of aiding the pursuit aviation and antiaircraft artillery in their action. The modern searchlights have a maximum beam range of from 16,500 to 19,700 feet under favorable conditions, while some of the latest models may reach anywhere from 36,000 to 42,500 feet.

According to foreign views, searchlights may be employed in the defense of objectives by the formation of illuminated fields for the action of the pursuit craft and by the illumination of separate targets operating against the defended area. Searchlights may be utilized also as beacons for the guidance of friendly pursuit craft and for signal purposes.

Searchlights establish illuminated fields along the more probable direction of attack by aircraft. The width of this field is from 9 to 12 miles; its depth depends on the time required by the pursuit craft for the delivery of two or three attacks, multiplied by the probable speed of the hostile craft. The distance of the illuminated field from the boundary of the defended point is from 30 to 40 miles. In certain

instances this field may reach the immediate vicinity of the defended object. The zone of waiting of the pursuit craft is designated on the inner boundary of the illuminated field.

Searchlights operating with the antiaircraft artillery form an illuminated zone so as to enable the batteries to open fire within their zone of effective fire.

The illumination of individual targets is effected successively with a minimum of three searchlights.

Machine-gun fire does not necessarily require searchlight illumination. As a rule fire is conducted by limited curtain fire with the use of tracer bullets for fire adjustment.

The speed with which aerial combat is conducted and the swift changes in the direction of action, requires close coordination between the various means of antiaircraft defense. Their efficient control is essential because each type of force operates quite independently within its own zone. An exception to this may be the transfer of targets from the pursuit aviation to the antiaircraft artillery. It is highly important that zone boundaries be covered in each instance by duplicate means of antiaircraft defense, in order to prevent the enemy from crossing these boundaries at any particular point.

Proper cooperation is insured by an understanding on the part of each type of force of its own mission and of the zones of action of all the forces involved. First of all, the

priority in which the aircraft warning service is to warn each type of force must be laid down. This information is first transmitted to the defended point and then to the pursuit aviation, or simultaneously wherever possible. Next, the antiaircraft artillery is warned, along with the other elements of the defense.

Everyone concerned must be duly acquainted with the zones of the pursuit aviation, in order that the action of pursuit aircraft may not be impeded. The pursuit craft, in turn, must be informed with respect to the zones of barrage fire of the antiaircraft artillery and the zones of the obstruction balloons. The zones of pursuit aviation are assigned so as to cover the most probable lines of flight of the hostile aircraft not only to the objective, but on returning therefrom as well.

Cooperation between antiaircraft artillery and captive balloons includes the preparation of barrage fires by the antiaircraft artillery along the flanks of the zones of the obstruction balloons. There may be certain instances where the antiaircraft artillery will conduct its fire in front of the obstruction balloon zones.

The searchlights, first of all, assist the pursuit aircraft and then the antiaircraft artillery. Control of the searchlights should be so arranged that they may promptly pass from assistance to the pursuit craft to that of the antiaircraft artillery.

Antiaircraft Artillery in the Polish Campaign

The Experience of an Antiaircraft Battalion

["Die Flakartillerie im Polenfeldzug, gemessen an den Erfahrungen einer Flakabteilung," by Major V. Minden. Translated in the Translation Section of the Military Intelligence Division, Washington, D.C., from *Der Truppendienst*, 24 May 1940.]

CONDENSED BY MAJOR WILLIAM H. SPEIDEL, Infantry

On the whole, the German large antiaircraft materiel and motorcycle equipment gave a very good account of themselves. One fact must be borne in mind. During the training period, in order to spare the equipment, the movements of antiaircraft artillery were confined almost entirely to excellent German highways. In Poland, however, our experiences were limited to but one good road—Warsaw to Lodz—and in the main we were obliged to make constant use of the poor sandy roads. Our drivers deserve a great deal of credit for the excellent manner in which they handled their vehicles in the movements over very difficult terrain. Much trouble was experienced in maintaining the rate of speed necessary to afford protection at the proper time. No one had ever thought that the Poles could be driven back so rapidly. The roads of deep sand might even have been considered impracticable for the movement of tractors, which often had to be resorted to in order to dislodge the trucks that had become bogged down in the sand. Many of these movements were carried out during the night and those during the day were of such great length that the drivers had little time for rest and scarcely more to devote to maintenance. It was quite noticeable that the motor vehicle oper-

ators had acquired the spirit of the old horse-drawn organizations—"first the horse, then the rider," modifying this slogan into "first the engine, then the driver." In order to reduce poor stretches of road to a minimum it was necessary for the leader of each unit to conduct a preliminary reconnaissance over the route which he expected to travel.

In passing motor columns on dusty roads which were either poorly marked or not marked at all, the role of the motorcyclist was one of constant drudgery. His peacetime training showed its value; by strenuous effort his mission was usually accomplished. It is well to reflect how often the motorcycle messenger is sinned against. His employment on missions of minor importance should be deferred until such time when they may be included with others. Conserving his strength will increase his value and he will be on hand when required. With his single companion he is often confronted with situations that require independent action and that will test the resources of a man with steady nerves.

In modern war, involving the movement of masses, the march will always remain a problem, the solution of which, to a great extent, will be a deciding factor in victory

or defeat. A clear conception of the manner in which it must be accomplished must be understood by the motor vehicle operator, as well as by the column commander. One column must not overtake another column. Columns which are halted on the road must not be passed until its commander has been informed. Otherwise the halted column may start while it is being overtaken, an action which will result in two parallel columns moving on the same highway. In the rear of a large column there should always be an officer charged with the mission of preventing other columns from attempting to outdistance it. When there is considerable traffic on the highway, experience has proven that the first phase of the movement should cover as long a stretch as possible and that the longer rests be confined to the last phase of the march.

Our aircraft had accomplished such thorough work in preparing the way, that during the first days we saw no enemy airplanes at all. Our attacking squadrons had power behind them and the destruction by the diving Stukas was terrible. When judged on the basis of the number of hostile planes encountered, it must be conceded that our unit did very good work. Out of five enemy planes that we recognized we brought down three. Due to our rapid advance and our overburdened system of communications it was difficult to maintain contact with the rear. Consequently too little was known concerning the victories won by the antiaircraft artillery. One battalion alone brought down seventeen planes and another twelve, accomplishments which did much to establish confidence in our arm and prove its worth. During one gloomy, drizzling morning, when the clouds lay but six hundred feet above a small Polish city and no one had expected the approach of a hostile plane, the sound of an engine was suddenly heard and for a moment an airplane flew ghost-like along the lower edge of the clouds. Instantly the airplane alarm signal was sounded. In the fog the nationality of the plane could not be determined, but the shadowy outline, well fixed in our memory, indicated it to be a single-seater pursuit PZL. The few seconds available were sufficient to enable two guns to get into action with the result that both guns fired a total of forty rounds before the plane disappeared from sight. A few seconds later we received a congratulatory message from the I Corps for bringing down the plane. The order to keep a man in the gunpointer's seat ready to fire at any time, born of the experience that every second is decisive, paid well in this particular case. I cannot help but reflect on the words of one of my former commanders, words which I also impressed on my organization, "The heaviest demands are made on the antiaircraft artilleryman; he must wait for days and even weeks and then, suddenly, he is forced to perform quick and accurate work within a few seconds."

The reconnaissance of fire positions for heavy batteries cannot be started too early. It is only when we can fire from the very start far over the heads of our own infantry into the air space of the enemy, that we can place a sufficient number of shots in the air to give real protection, keep enemy reconnaissance planes far enough from our own lines and scatter his combat planes so that our fighters can make short work of them. This implies that the officer making the reconnaissance (battery commander or reconnaissance officer) must go forward with the infantry and make the reconnaissance as soon as the terrain is free of the enemy. Each gun position, as well as each change of position, must be determined well in advance and must be coordinated with each element of the command.

In the new fire position the battery commander must establish communications as soon as possible with the troops on his right, his left and to the front, in order to safeguard against the effect of hostile surprise. The protection of the flanks against scattered hostile forces, or against those which have effected a break-through, must be provided for constantly by the antiaircraft artillery.

At one time we were engaged in attacking a fort which had been putting up a stubborn defense. All available artillery would be required to break down its resistance. Upon offering the corps my batteries, one battery was released for this purpose and dispatched to the division needing it most. It was assigned to the front infantry line, a railroad embankment just high enough for our gun barrels to reach over, and adequate for the protection of our crews. One gun was placed on the embankment, two were quickly intrenched, and the fourth was placed under cover and limbered up. As the infantry continued to sweep the enemy with fire, the light artillery smoked out a machine-gun nest and blew out the entire machine-gun emplacement; explosive shells knocked the enemy sharpshooters out of the trees, and then we began the bombardment of the fortress. It was in fights such as this that we won respect for our young arm.

The reconnaissance of positions for engaging ground targets is just as important as that made in the case of air targets. The approach and the return must be thoroughly considered and studied. Surprise is an important element of success and must be taken into consideration when going into position. While being drawn by a vehicle over the last stretch of 200 yards before reaching the emplacement, we covered the gun with an improved iron shield.

The complex nature of our arm and the excellence of its equipment will continue to prove their value as the war progresses. We should understand clearly that the pride in our young arm is justified, and that it is our responsibility to increase and fortify it.

The German Armored Divisions

[From a translation of portions of the book *Achtung Panzer* by General Heinz Guderian, German Army, made in the Translation Section of the Military Intelligence Division.]

CONDENSED BY MAJOR WILLIAM H. SPEIDEL, *Infantry*

In 1933 Germany began to reorganize her army. Over a period of fifteen years the training of motorized troops in the small army of the Reich had proved inadequate. No suitable doctrine had been evolved, and so the army adopted the English regulations, which it proceeded to modify in conformity with the country's particular situation. From the very start unity in command and in training was stressed as the guiding principle. The lessons taught by the experiences of the World War were closely studied—the employment of armored units as accompanying units for the infantry. The study indicated that the speed and radius of action of tanks presented potentialities for reaching a rapid decision in battle, providing this new weapon was not limited to the slow development of infantry and artillery combat. This principle, by a single stroke, brought about the creation of an armored corps, capable of being trained for combat in large groups and accomplishing greater missions independently. The armored divisions were to be well-balanced units made up of all the motorized elements necessary to their support and maintenance.

The armored division consists of:

Headquarters.

- 1 reconnaissance group.
- 1 tank brigade.
- 1 motorized rifle brigade.
- 1 motorized artillery regiment.
- 1 engineer battalion.
- 1 antitank battalion.
- 1 signal battalion.

All elements of this division are motorized, and are organized as follows:

1. The motorized reconnaissance group:

- 1 independent company, including an armored section and a liaison section on motorcycles.
- 2 companies of light and heavy armored cars (total of 40) organized in four sections.
- 1 motorcycle company composed of 3 sections (each equipped with 3 light machine guns), and 1 section with 4 heavy machine guns.
- 1 company with three 75-mm mortars and three 37-mm guns.

2. The tank brigade:

- 2 regiments of 2 battalions each.

Each battalion consists of a headquarters and 5 companies; 3 of these are light companies of 4 sections each, 6 tanks to a section, each tank armed with either a light machine gun or a 20-mm cannon; one a heavy tank company composed of 4 command tanks and 4 sections of 4 tanks each, each tank armed with either 37-mm or 75-mm antitank guns; and the fifth a heavy weapons company with two 75-mm mortars, three 37-mm guns and 1 heavy machine gun.

Altogether the battalion has about 90 combat tanks, 25 attached to the battalion headquarters and 10 held in reserve. The regiment has about 180 combat tanks, 70 attached to the various headquarters and 20 held in reserve. The brigade includes a total of approximately 375 combat tanks, plus 130 attached to the various headquarters or held in reserve.

3. The rifle brigade:

- 1 rifle regiment, composed of 2 battalions on 6-wheeled vehicles.

Each battalion consists of 5 companies, 3 of which are armed with light and heavy machine guns, 1 with two 75-mm mortars and three 37-mm antitank guns, and 1 with 8 heavy machine guns and six 80-mm mortars.

- 1 motorcycle battalion, composed of 3 rifle companies with 9 light machine guns, and 1 machine-gun company with 12 heavy machine guns.

4. The artillery regiment: 2 battalions of twelve 105-mm guns.

5. The engineer battalion: 3 engineer companies and 1 pontoon section.

6. The antitank battalion: 3 companies with twelve 37-mm antitank guns mounted on heavy motor trucks.

7. The signal battalion: 1 telegraph company and 1 radio company.

The armored division contains approximately 1,000 vehicles, including motorcycles, 500 tanks and armored cars, and 24 pieces of artillery. On the road the total number would form a column 62.5 miles long.

The employment of the armored division, in cooperation with other arms, in an action which contemplates a breakthrough of the hostile defensive position organized on more or less irregular terrain, may be illustrated by briefly outlining the successive phases of the attack. A preliminary phase should first include a thorough reconnaissance by units of the engineer battalion in order to remove road blocks, obstacles and traps.

1. *Initiating the attack:* The attack is now launched by the leading wave of the first echelon of tanks against the outpost line of resistance and across the mined area in front of the main line of resistance. This phase includes a coordinated attack from the air, in which assault planes attack the main line of resistance with machine guns and bombs while the bombers attack the reserves.

2. *The tanks of the first echelon attack the antitank units:* The infantry advances under cover of the third echelon, whose mission is to destroy machine-gun nests. The artillery opens fire on the hostile observation posts and impedes the bringing up of the enemy's reserves by firing on the rear areas.

3. *Continuing the attack:* The tanks continue to move forward, the first echelon fanning out when it begins to reach the high ground on which the hostile main line of resistance is located.

4. *Crossing the main line of resistance:* The first echelon now crosses the hostile main line of resistance and enters the hostile artillery position. It destroys command posts and makes every effort to prevent the defense from becoming reorganized. The second echelon attacks the hostile batteries which have become disorganized in rear of the hostile main line of resistance, while the third echelon and the infantry cross the main line of resistance.

5. *Combat between tanks:* By this time the defense will have made some effort to reorganize his forward position in an attempt to block the advance of the first echelon and to employ his artillery against the forward movement of the various echelons. The infantry, following the attacking tanks, now occupies the hostile main line of resistance. Meanwhile, the motorized antitank guns have been closely

following the first echelon, and it is now their mission to take up positions for supporting their own tanks when combat against the enemy's armored vehicles is initiated. During the combat between tanks our own artillery is displaced forward.

The combat between tanks is a decisive phase which determines the ultimate success of the battle. In this connection there are many important lessons that may be learned from the employment of tanks in the World War and the Spanish Civil War.

The force of the impact delivered by an armored unit is essentially a function which varies with the degree of resistance which the armored vehicle can offer to the projectiles of the opposing antitank guns. The Germans, in order to attain speed as well as a great radius of action, have necessarily been obliged to sacrifice a certain amount of protection. In their particular case, therefore, the success of an attack by armored units against positions organized for defense must be based mainly on the element of surprise, strategic as well as tactical.

The Organization of the Medical Service of the German Army and its Employment in the Campaign Against Poland

[An article by Lieut. Colonel H. Hartleben, Medical Corps, German Army. Translated from the German in the Translation Section, Army War College, Washington, D.C.]

CONDENSED BY CAPTAIN M. R. KAMMERER, *Infantry*

The medical service, as well as other branches of the army, finds itself faced with new missions, new tasks and new problems as a result of the changes brought about in modern warfare by motorization and mechanization. The campaign in Poland offered the first opportunity to test the organization of the medical services of the German Army in this new warfare.

The two main problems that must be solved by a military medical service are: (1) The problem of providing the best medical supply system that is possible under warfare conditions, and (2) The problem of transportation, especially in a war of movement. A simplification of these problems will result if the organization of the medical service is so elastic as to meet the various requirements of war under all conditions and if it is founded on the simplest and most uniform basic elements possible in order to measure up to the requirements of the various types of combat elements.

The medical service of the German Army, as in any army, emanates from the combat units. Every soldier carries one large and one small first aid packet and is trained in the application of these dressings. The medical personnel of the combat units includes litter bearers with special training in first aid and the transportation of the wounded. In addition, a medical noncommissioned officer or private with thorough and careful training in medical service is assigned to each unit. All of the medical personnel, including the litter bearers, carry on their belt a medical kit for first aid. The litters consist of two equal-sized collapsible halves; they are so constructed that the bearers can easily carry and as-

semble them with few manipulations. Conditions permitting, the litters may be transported on two-wheeled carriers.

The infantry battalion is accompanied by two medical officers—the battalion medical officer and his assistant. Their equipment contains quantities of medicine and dressings sufficient to meet the demands of major operations. Included are tetanus antitoxin and a "pack filter apparatus" for the purification of water derived from any source. This equipment, packed in chests, is carried on a special medical equipment car. Small units may carry enough of this equipment to meet their own demands.

In combat, the equipment of the battalion medical officer, together with his personal equipment which he carries with him in a leather case, serves for the establishment of the battalion aid station. This aid station is located as near to the actual front as possible. As a rule, the wounded receive their first aid by a medical officer at this station, unless such aid has been rendered in battle. Aid by a surgeon-specialist usually cannot be given at the battalion aid station, and no provisions are made for it.

The medical service within the infantry battalion is, thus, conducted independently by its own medical officers and their assistants—the medical NCO's and privates. The medical service of the other arms is carried out in a similar manner, though with less personnel and equipment. Provisions are made for support by medical companies which go into action when casualties are heavy and serve mainly for the purpose of collecting the wounded in the zone of action.

From the battalion medical detachment, the medical service passes to the medical elements of the division. They comprise normally:

Two medical companies;

One motorized field hospital (accommodations for 200 patients);

Two motor ambulance trains (15 motor ambulances each).

These elements are under the command of the division medical officer.

Depending upon the type of division, the medical companies are either horse-drawn, motorized, or one company may be motorized and the other horse-drawn. In the case of very highly mobile units, the field hospital is omitted and replaced by a third motor ambulance train, in order to meet the constant transportation requirements.

Both on the march and in combat, the medical companies constitute the main factor of the division medical service. Each company consists of three platoons, each of which has a separate function. The first platoon is made up entirely of litter bearers who collect the wounded in the field and evacuate them from the battalion aid stations. The second platoon organizes the division aid station; it includes at least one surgeon-specialist. The third platoon may be used in support of the other two platoons or for independent missions. Near the division aid station elements of the medical company may be used to establish the collecting station for slightly wounded.

The employment of two medical companies in the division makes for great mobility of the medical service. It permits the medical service to keep up with the advance of the combat units and, in cases where the two companies are employed separately or in relief, to carry out the surgical work and to evacuate the casualties in a normal manner. It permits the establishment of two medical centers behind the combat troops where the operations cover a wide front. Besides, both companies may be employed jointly under favorable conditions. Thus the medical service of the division is elastic enough to conform to any number of changes in the situation.

The equipment of a medical company includes canvas for the erection of the division aid station (where buildings are not available) and modern surgical equipment. Like the battalion medical equipment, the equipment of the medical company is suitably packed in individual chests. Four horse-drawn or motor ambulances are assigned to the company.

The division aid station is the first place at which surgical aid is rendered. Here the wounded are examined as to their fitness for removal, their condition is improved and emergency operations are performed. The duties of the division aid station are limited to these functions because of the necessity of maintaining the mobility of the medical companies and of their remaining as near to the combat units as possible—three or four miles behind the front line.

Surgical activity within the division is centered further back in the surgical hospital, where the routine should be similar to that of a regular hospital in the zone of the interior. Its equipment is somewhat larger and heavier than that of the division aid station. The surgical hospital is

motorized and can follow the division quickly upon being relieved by other medical units. If necessary, a second surgical hospital may be moved up to support the division surgical hospital, until relief arrives.

The division evacuates its sick and wounded mainly by means of its motor ambulance trains, part of which may be used for the evacuation of patients from the aid stations to the rear or to the division surgical hospital. The motor ambulance trains serve also for the transportation of wounded to collecting stations or hospitals in the communications zone. The motor ambulance of the German Army accommodates four lying, or two lying and four sitting, or eight sitting patients. A number of motor ambulances are equipped for cross-country travel.

The division medical service as outlined above may be reinforced temporarily, if necessary, by additional medical elements. Besides, surgical hospitals of the army unit may be employed in all zones if circumstances call for such reinforcements, as, for instance, in the case of epidemics.

A corps medical officer is designated to supervise the execution of the directives from the army medical service, to supervise the progress of the division medical service and to take such corrective action as he may find necessary. He is authorized to shift the medical elements within the division for the purpose of balancing their strength. He also has at his disposal special medical elements which he may employ whenever the divisions call for help. He may also call upon the army chief medical officer for additional medical units if required.

The purpose of the organization of the medical service above the division is to regulate and execute the evacuation of patients to the rear, and to sort the sick and wounded according to medical requirements. All of this belongs to the functions of the army chief medical officer. Depending upon the size of the army, he has at his disposal a varying number of medical units, especially motorized surgical hospitals designed for local support of the division medical services. For evacuation purposes, he has under his command a number of motor ambulance trains organized like those of the divisions. These medical units are combined into an army medical detachment.

Each army has two evacuation battalions. They are organized into three companies of three platoons each. Each platoon is equipped to set up a separate collecting station. The collecting stations serve merely as transfer stations where the patients receive simple medical attention and are afforded rest and food for brief periods. These stations are placed at points where the situation indicates a concentration of wounded and also at points where the sick and wounded must be distributed among the various hospitals in the communications zone or loaded on hospital trains.

The hospitals in the communications zone are divided into hospitals for the slightly wounded and hospitals for the seriously wounded; each numbers up to 500 beds. They are equipped as much like regular hospitals as possible and contain special wards under the direction of surgeon-specialists. Where local hospitals are available, they are, of course, put into service. Other large buildings may also be used to house the hospitals. The mobile hospital equipment includes as standard equipment capable X-ray apparatus and dark room equipment, all suitably packed in chests.

In order to keep the medical services with combat units properly supplied at all times a medical supply depot is allocated to each army. This army depot may establish branch depots where and when it deems such stations necessary.

The officers of the medical service are picked for their professional ability as well as for their qualities as leaders. Assigned to the chief medical officers of the armies as consultants are carefully selected and recognized specialists in their profession—generally university professors. The latter assist the medical officers of the various medical establishments either with advice or, when necessary, actual help.

In addition, the army chief medical officer has at his disposal special groups of auxiliary surgeons. These surgeons, carrying their own sets of surgical instruments, go into action where their assistance is most urgent, be it at the division surgical hospital or the division aid stations. It was demonstrated in the Polish campaign that it is not advisable to send these surgeons any further forward than the division aid station.

The German Army entered the war against Poland with a medical service organized along the lines described above, and found that no material changes were necessary in that organization—that it could solve all the problems with which it was confronted.

Chief among the problems encountered was that of transportation, for not only did the military operations proceed at an extraordinary pace but the road conditions in Poland were decidedly poor. Nevertheless the elasticity and the simplicity of the organization enabled the medical service to keep itself and its supplies moving forward with the combat units while casualties were being evacuated with a maximum of efficiency and speed.

The motorized medical units bore the brunt of the burden, the horse-drawn medical companies being unable to keep up with the swiftness of the military operations. The motor ambulance trains performed tremendous feats. Thanks to the motorization of the division surgical hospitals,

they were able to follow the combat units at a relatively fast pace. In many instances, the hospital units established themselves quickly in local hospitals, schools or other public buildings, even though the primitive conditions in certain parts of Poland made it necessary frequently to resort to auxiliary measures.

The great distances that the medical units were required to cover could have been fatal to wounded whose condition called for special treatment in clinics located in the zone of the interior. The large number of demolished railroad bridges were quickly repaired, however, thus permitting the use of the specially equipped hospital trains for the evacuation of patients by rail to the zone of the interior. In very serious cases, such as gunshot wounds of the eye or skull and fractures of the femur, patients were evacuated by aircraft—either in ambulance planes or in the regular transport planes. Evacuation by air over great distances proved highly satisfactory, particularly since no major variances in altitude were involved.

In view of the prevalence of centers of communicable diseases in Poland, a certain number of losses due to various kinds of diseases was anticipated. However, every German soldier being inoculated against typhoid fever, the number of typhoid cases was extremely small. Dysentery cases occurred, for the troops had to march through many regions where that disease was common. Well trained in hygiene, the troops succeeded in keeping the disease down and prevented the spread of a regular dysentery epidemic. There was not a single case of smallpox among the soldiers. The inoculation of all wounded against tetanus proved a complete success. Lockjaw has lost its terror as a war disease.

The casualties were relatively small. Official figures have been released, placing the killed at 10,000 and the wounded at 30,000. Thus the ratio of killed and wounded is 1:3, a somewhat higher ratio than that of the war of 1914. The higher ratio can probably be attributed to the numerous engagements fought at close range and to the increase in effectiveness of modern weapons.

Japanese Landing Operations

[From an article by N. Gasimov, in *Krasny Flot*, 14 April 1939. Translated from the Russian in the Historical Section, the Army War College, Washington, D.C.]

CONDENSED BY CAPTAIN M. R. KAMMERER, *Infantry*

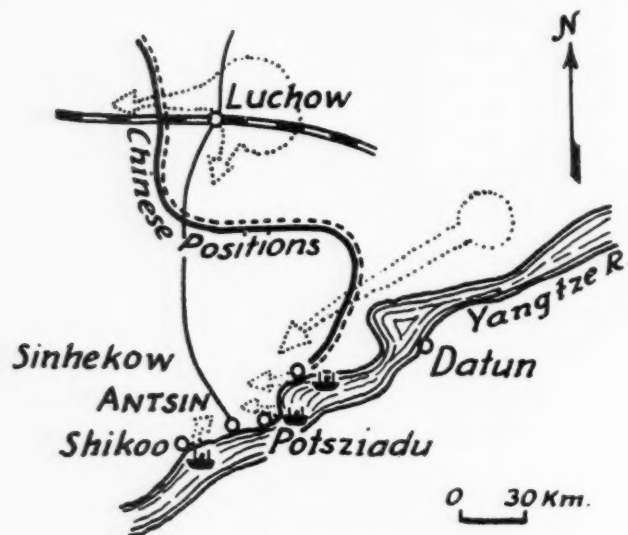
During the operations in the Yangtze valley in the summer of 1938, the Japanese made extensive use of landing parties, conducted jointly by naval and land forces. The purpose of these operations was to bring about the capture of Hankow in the shortest possible time and produce a situation favoring the conclusion of the war.

Mindful of their failures in the Nanking and Suchow operations, the Japanese made lengthy preparations prior to the launching of their campaign on the Yangtze. They devoted special attention to the organization of a river squadron and to the planning of joint action by the land and naval forces. They failed, however, in the execution of their plans. The operations for the capture of Hankow were ex-

tended over a period of five months, during which time the Japanese, according to foreign press reports, suffered losses amounting to 300,000 men.

The beginning of the Hankow operations should be considered with the Japanese attempt to capture Datun, the first barrier in the advance of the Japanese squadron upstream. Datun, on the south bank of the river, is approximately 230 miles from Hankow. Early in June the Japanese concentrated at Datun about one hundred vessels, including over thirty naval craft armed with medium caliber artillery. Meanwhile the main concentration of the Japanese land forces on the north bank of the river was increased to 80,000 men. (See Sketch 1)

For eight days the Japanese naval guns bombarded the Chinese field fortifications surrounding Datun. On the ninth day, when the landing was attempted, the artillery bombardment was reinforced by an aerial bombardment with twenty medium bombers, all the fire being concentrated against the Chinese fortified positions. The naval vessels were a little more than a mile from shore. The movement of the transport vessels from behind the line of naval craft was covered by concentrated artillery fire.



Sketch 1.

Upon the approach of the transports to within 300 or 400 yards of the bank of the river, motor boats were lowered with infantry landing parties. The artillery fire at this time was switched to the rear of the Chinese positions. The Japanese attack, however, was repulsed. Repeated attempts to effect a landing ended in failure.

The Japanese squadron, forcing the barriers in the river, then moved upstream in the direction of Antsin, which is located on the north bank of the river about 185 miles below Hankow. The river narrows down somewhat at this point, its banks are covered by reeds, and the current is about five knots. The Chinese had built field fortifications around Antsin, while east of the city there were three permanent forts with field artillery armament. Thus the capture of Antsin involved considerable difficulties for the attacker.

But the capture of this city was important to the Japanese. It would open the water route to Hankow, create a threat to the right flank of the Chinese defensive zone, and afford an opportunity for free maneuver along both banks of the Yangtze. The Japanese command decided therefore to carry out active operations on land while the navy was assisting in a strong landing operation in the immediate vicinity of the city.

In the conduct of the operations against Antsin, the Japanese forces were increased to a strength of 100,000 men, the bulk of these forces in the Luchow area. The main drive was to be westward from Luchow, while a small force was to advance southward in the direction of Antsin with a view to diverting Chinese forces from the eastern sector of the Antsin positions where the landing was to be effected.

Another group of Japanese land forces was given the mission of launching a vigorous attack along the north bank of the river against Antsin.

The landing force was composed of one infantry brigade, a marine landing battalion, artillery, engineers and chemical elements, totalling about 12,000 men and 80 to 90 guns. The squadron comprised 40 units, including destroyers, mine sweepers, naval and river gunboats, and blockade boats. Twenty steamboats transported the troops designated to make the landing. In addition, the operation was supported from the air by 100 airplanes, mainly light bombers, some of which had arrived on aircraft carriers.

The Chinese forces were in strong positions on both sides of the river. The immediate defense of Antsin had been entrusted to the Chinese 146th and 147th divisions with a total strength of about 18,000 men. The Chinese command had anticipated the landing operations of the Japanese at Antsin, though they had not expected such a rapid penetration by the Japanese squadron at Datun. As a result they were unable to concentrate sufficiently strong forces in the threatened area.

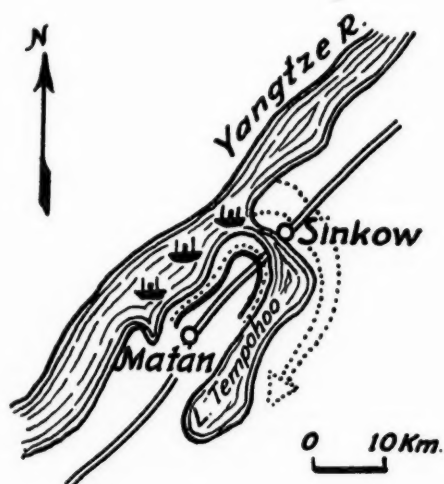
On the morning of 11 June, the Japanese squadron forced its way through the barriers at the city of Datun. The Japanese vessels spent that entire day in intensive efforts at clearing the channel of obstructions and mines in the area between Datun and Antsin. In clearing the channel the Japanese aviation played a considerable part, reconnoitering points containing barriers and bombing mine fields from the air. Simultaneously the Japanese aviation and torpedo-boats conducted a thorough reconnaissance of the areas selected for the landings. All of this work was completed by the evening of 11 June and at 2:00 AM, 12 June, the Japanese proceeded with their actual landings.

The landing was effected as follows: The Japanese squadron, divided into detachments, extended under cover of darkness in the Sinkhekow and Potsziadu areas (See Sketch 1). Simultaneously, a special detachment of about 1,200 men, loaded in fast motor boats, was moved up the river past Antsin to Shikoo, with the mission of attacking Antsin from the rear. The main forces, below Antsin, loaded on barges and boats, proceeded to the shore under cover of the artillery, aviation and smoke screens. The first attempt ended in failure. Confronted by the artillery and machine-gun fire of the Chinese, the Japanese boats, subjected to heavy losses, turned back and the troop transports were taken behind the line of war vessels. After several hours of artillery preparations the Japanese repeated the attempt to land. The second effort was successful, though costly, and a foothold was gained below the city. The landing by the detachment at Shikoo above Antsin was secretly effected and this force launched its advance against Antsin from the southwest at daybreak.

With a view to concealing the landing points of the main forces, small Japanese detachments feigned landings at numerous points along the shore. The action of the Chinese forces was characterized by great tenacity, but the overwhelming superiority of the enemy in modern mechanical equipment compelled the Chinese forces to withdraw. On the evening of 12 June the Japanese enveloped the city and the next day, after very stubborn fighting, succeeded in capturing it.

The Japanese naval squadron and Japanese planes played a decisive role in the fighting at Antsin. The battle for this city served to demonstrate the inability of the Japanese infantry to develop the attack independently, without strong artillery support, and to overcome the resistance of the Chinese forces. The landing operations at Antsin further demonstrated the fact that from a purely technical point of view the execution of landing operations by the Japanese suffers from certain deficiencies; their schedules and timing of actual landings were not observed, the landing operations were protracted and, as a result of this, their troops effecting the landing were subjected to tremendous losses.

As the Japanese continued their advance up the Yangtze the next strong resistance was encountered at Matan (See Sketch 2). This fortress was situated on the south bank in a narrow defile between the river and Lake Tienpohu. Five forts, incorporated into a system of field fortifications, formed the Chinese center of resistance at this point.



Sketch 2.

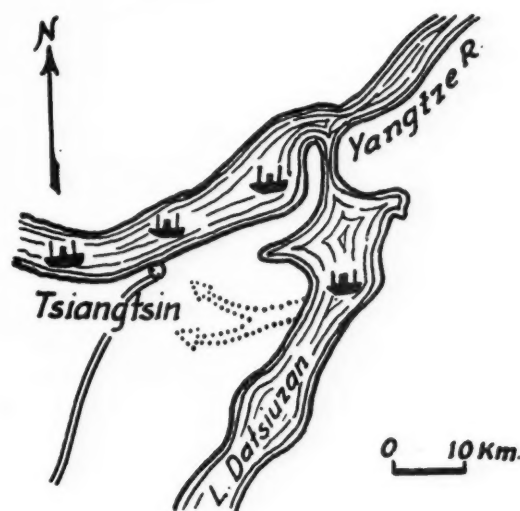
On 24 June, at noon, the Japanese landed a reinforced infantry regiment in the vicinity of Sinkow. The landing was supported by powerful artillery fire from the naval vessels, but no progress could be made by this force in the face of the Chinese artillery bombardments. Other efforts on the part of the Japanese command to effect landings on the north shore of Lake Tienpohu and on the south bank of the Yangtze proved equally unsuccessful. Then the Japanese squadron began a systematic bombardment of Matan with gas shells.

The Chinese artillery, its ammunition supply exhausted, was incapable of replying to the Japanese fire. Being unprepared for a gas attack, the Chinese forces were compelled to withdraw, and the Japanese captured the city 26 June.

The next important barrier to the Japanese advance up the Yangtze to Hankow was Tsiangtsin. Capture of this city meant to the Japanese a clear route for launching an offensive against the Chinese capital as well as a possible route for enveloping the main forces of the Chinese army.

The Japanese began their operations against Tsiangtsin 21 July with an aerial reconnaissance, coupled with an in-

tensive aerial bombardment of the Chinese positions. The Chinese command had at its disposal in this area three divisions but the equipment and supply of these troops were very inferior to those of the Japanese. The latter, taking advantage of their superiority in the air, secretly moved their squadron up to Tsiangtsin and at dawn 23 July landed a reinforced infantry brigade south of the city, on the west shore of Lake Datsiuzan (See Sketch 3).



Sketch 3.

The landing proved a surprise to the Chinese who had expected the enemy from the direction of the Yangtze. The landing force advanced on Tsiangtsin, stationing a screening force in the south. Aided by their aviation, the Japanese repelled many vigorous Chinese counterattacks. On the night of the 24th the Japanese landed a brigade of marines on the bank of the Yangtze. Threatened with an envelopment, the Chinese were forced to withdraw. As in the preceding instances, the Japanese were successful due to their quantitative superiority in mechanical equipment, particularly aviation.

The examples of cooperation between naval vessels offering artillery support and land forces are numerous in the Japanese campaign in China. The course of operations on the Central Front depended in large measure on the outcome of the fighting on the Yangtze. The Japanese squadron on the Yangtze, supported by aviation, assumed the role of a battering ram for their land forces while the Yangtze served as the axis of communications in the Japanese advance on Hankow. Japanese naval vessels forced their way upstream and by so doing assisted in the advance of their land forces. The Chinese forces manifested an excellent fighting spirit and defended themselves with great tenacity, but their lack of artillery and aviation and the absence of any naval forces enabled the Japanese to clear the channel and to gain the rear of the Chinese positions.

From the experiences of the battles on the Yangtze, conclusions may well be drawn concerning the methods which the Japanese have developed in the execution of landing operations, and their system of cooperation between naval and land forces. The naval objectives are designated in conformity with the missions of the land forces. The action

of the naval forces is preceded by a thorough reconnaissance, undertaken by aviation and destroyers or armored barges. On the basis of this reconnaissance a detailed plan of operations is formulated, a schedule is worked out for the loading and unloading of the land forces, fire tables are prepared, missions are assigned to the different vessels, to the landing parties and detachments. The advance of the flotilla is safeguarded by the clearing of the river, and is accomplished under cover of darkness or of powerful air forces.

The landing is made in two or three echelons. The mission of the first echelon is the seizure of a base on shore. This echelon consists largely of marine landing detachments, the first wave of the echelon being composed of selected platoons in the echelon. Communication between ship and shore is maintained by means of flash signals, radio or telephone.

The landing may be preceded by either a brief artillery bombardment or by a lengthy artillery preparation. The transports move as close to the shore as possible and transfer their landing troops to motor boats, launches or armored barges. When these small boats are 300 or 400 yards from shore the artillery fire is shifted to enemy defenses in the rear and machine-gun fire is used against the contemplated landing point from barges and mine sweepers.

The units of the first echelon are assigned ample artillery, trench mortars and chemical weapons. Special im-

portance is attached to the role of the air service which is given the mission of covering the landing and that of supplying the landing parties on shore in the event that the latter should lose contact with the squadron.

Despite the cooperation of the naval squadron, the general rate of advance of the Japanese in the Hankow area was rather slow, averaging slightly more than a mile a day. This was due to the fact that the Japanese troops experienced great difficulty and suffered heavy losses in overcoming the resistance of the Chinese forces on land. On the other hand, the action of the Japanese naval forces was far from successful in many instances. The routing of the Japanese landing force at Datun is not the only instance in which a Japanese landing party met defeat. The general losses suffered by the Japanese troops in the Yangtze operations were tremendous. Some of the Japanese divisions lost over fifty percent of their strength.

Attempts by the Japanese command to continue their advance west of Hankow proved fruitless. The Yangtze River in the area is shallow, the channel is difficult to navigate, and the operations of the Japanese naval vessels could not be developed here on a satisfactory scale. The Japanese military forces, having lost contact with their naval forces, bogged down and later came to a complete standstill upon encountering the stubborn resistance of the Chinese.

Principles of the Offensive

(Japanese Field Service Regulations 1938)

[From an article by N. Kozlow, in *Krasnaya Zvezda*, 11 May 1939. Translated from the Russian in the Historical Section, the Army War College, Washington, D.C.]

CONDENSED BY MAJOR WILLIAM H. SPEIDEL, *Infantry*

The main purpose of the offensive is the envelopment and annihilation of the enemy on the battlefield. It may be carried out by turning one of the flanks, by turning both flanks or by penetrating the zone of the hostile defense. In all instances there must be resolution, surprise and a concentration of the principal mass of forces in the direction of the main attack accompanied by active operations on the part of the forces making the holding attack, with a view to diverting the enemy's attention and forces from the direction of the main blow or envelopment.

The main attack is directed against the hostile flanks, against points on the boundary between sectors, or against sectors held by weak hostile forces. The attack involves the approach (establishment of contact), reorganization preliminary to deployment, deployment for action and occupation of the line of departure prior to the attack, the advance and attack, and the pursuit.

FRONTAGES

The division is assigned a definite zone of advance. The width of the zone of an infantry division operating as part of an army in an attack is usually about 4,375 yards. In the case of an advance in a secondary area, or where the divi-

sion operates independently, the frontage extends to 6,500 or 8,500 yards. In the penetration of a zone of resistance the line of attack is contracted to about 2,000 or 3,000 yards.

The width of the division front depends upon the disposition of the units in battle formation. The battle formation consists of front-line units and reserves—battalion, regimental, brigade and division reserves. They are divided into right and left flank forces. In some cases a zone is provided for a central detachment. One of these forces delivers the main effort.

The infantry company usually advances on a front of 220 yards. The battle formation of the front line should comprise but not exceed 20 companies. In rear of the front-line units are 7 or 8 companies in battalion reserve; behind these are 7 or 8 companies in regimental reserve; then come 6 companies in brigade reserve, and finally the division reserve which is made up of 8 companies or an entire regiment. This is not to be accepted as a uniform rule, changes being allowed according to the requirements of the situation.

RESERVES

The reserves of the regiment or brigade making the main attack may, in some cases, be drawn from the regiment

in division reserve. In this event, the regimental and brigade reserves will comprise two companies each, while the division reserve will consist of two battalions.

The skillful handling of reserves insures a proper exploitation of the success of the battle. It tends to direct the course of the battle toward its desired conclusion and facilitates a change in the line of action when this becomes necessary. In the case of unforeseen contingencies the reserve affords the necessary assistance in serving to overcome the disadvantages brought about by the situation. As a rule, the reserve is committed to action in order to exploit the advantages which have resulted from the success of the assaulting units. It must not be committed at the moment the front-line units are subjected to heavy losses; in such an event it would probably run a similar fate.

The more efficient units should be selected for the reserve and located usually in the direction of the main attack. If the reserve becomes exhausted during battle, the senior commander provides for its immediate restoration.

THE REINFORCED DIVISION

In offensive combat the division is reinforced with artillery and other weapons. This is accomplished ordinarily by the attachment of a tank battalion, a heavy artillery regiment, an independent machine-gun battalion (24 heavy machine guns), an independent trench mortar battalion (24 trench mortars) and an aviation company.

THE EMPLOYMENT OF TANKS

As far as possible, tanks are employed in mass formation in the direction of the main attack. If sufficient tanks are available they are formed into two groups: (1) accompanying tanks; (2) general operations. The general operations group is committed to action immediately upon effecting its concentration behind the first line of the infantry. Their objectives are the hostile artillery positions and command posts.

THE EMPLOYMENT OF AVIATION

Aviation is employed in the initial stages of combat against the hostile artillery and centers of resistance, hostile tanks and in supporting front-line units. As the battle develops, it attacks approaching hostile reserves, motorized and mechanized columns, and centers of communication. It attempts to determine the intentions of the enemy and directs special attention to the movements of the hostile forces behind the lines. Concurrently, it maintains observation of friendly forces who indicate their positions by means of panels and flags.

In localities where artillery and tanks are unable to keep up with the infantry, aviation supplants artillery fire by means of aerial bombardments.

THE APPROACH MARCH

As a general rule the division marches in two columns. The column intended for the main attack comprises about three-fourths of the division. In disposing his forces, the division commander usually attempts to assume positions which will facilitate the ultimate envelopment of the enemy.

The approach is conducted under cover of aviation which, supported by artillery, crushes the advanced and security detachments of the enemy. If the hostile security detachments consist of strong forces, the division commander supervises personally the seizure of important ground and the defeat or destruction of the hostile security detachments.

During the progress of the advance guard action a personal reconnaissance is conducted to locate the hostile main line of resistance, approaches to it, centers of resistance on the hostile flanks, artillery positions and the strength of the various defense sectors.

PLAN FOR THE ATTACK

When the moment arrives for the establishment of contact the division commander, accompanied by his artillery and other commanders, proceeds forward and, after studying the situation on the ground, issues his orders for the action of the advance guard and the main forces. The artillery and tank commanders prepare the necessary data for the employment of their respective forces, and then proceed with their preparations. It is at this time that the division commander usually makes his decision regarding the occupation of positions for the regrouping preparatory to deployment. He assigns zones and issues instructions pertinent to reconnaissance, security and antiaircraft defense.

THE OCCUPATION OF POSITIONS

The units occupy their respective zones promptly, adapting themselves to the particular terrain and making every possible use of concealment. The infantry should advance off roads, leaving available roads free for the artillery. Each unit commander provides immediately for his own reconnaissance and proceeds vigorously with his preparations for the occupation of his line of departure. The approach to and the occupation of the line of departure are usually undertaken at night. A vigorous reconnaissance is conducted during the day and provisions are made for the preparation of data for use during the battle. The movement and location of the remainder of the forces must be restricted to the use of cover. The shifting of forces begins with the approach of darkness. Units must be ready for the attack by dawn. The system of communications must be organized completely and functioning properly before the attack is launched.

The line of departure should be taken up as near as possible to the enemy, preferably in positions from which the attack can be launched in a single bound. There must be no action which might cause the premature commitment of our forces. When the line of departure is occupied at daybreak or before dawn, or where a gradual advance is undertaken, contact is established with the enemy by individual units under cover of darkness. Preparations with this in view are made during daytime. The establishment of the line of departure at a considerable distance from the enemy should be avoided.

THE ARTILLERY PREPARATION

It is preferable to attack before dawn or at daybreak. The attack should come as a surprise, sometimes without the

aid of artillery preparation, or with one of the briefest possible, so as not to require the infantry to wait long after daybreak before the battle begins.

Artillery preparations and night action on the part of the infantry are determined by the division commander. In the case of strongly fortified positions a thorough artillery preparation will be necessary for the destruction of the hostile defenses and weapons. In some cases the plan for the artillery preparation is formulated by the army commander, who controls not only the army artillery but also a portion of the division artillery. The artillery preparation also includes the use of mortars.

The duration of the preparation varies. In an advance at daybreak twenty to thirty minutes are allowed. In other instances an hour or more is permitted.

THE ATTACK

Attacks are launched swiftly. Regardless of the hostile fire power, the effect of hand grenades or gas, the assault must be continued. First of all, centers of resistance on the flanks must be neutralized and obstacles destroyed. While the infantry attack is being launched, the artillery simultaneously lays down an intensive fire along the hostile main line of resistance. It facilitates the advance of the infantry by neutralizing and disrupting the entire fire system of the enemy.

The tanks crush and destroy obstacles, heavy weapons, and centers of resistance on the flanks. Engineer troops attached to the infantry assist in overcoming obstacles, in combating attempts to reconstitute the hostile centers of resistance, particularly along the flanks, and in clearing seized ground of small hostile detachments and obstacles.

The penetration of the hostile position is followed by a combination of fire action and bayonet attacks, by the exploitation of success and the continuation of the advance. Specially organized detachments and engineers engage in mopping up remnants of the hostile detachments. At points where success has been attained the situation is exploited by the commitment of reserves.

THE PURSUIT

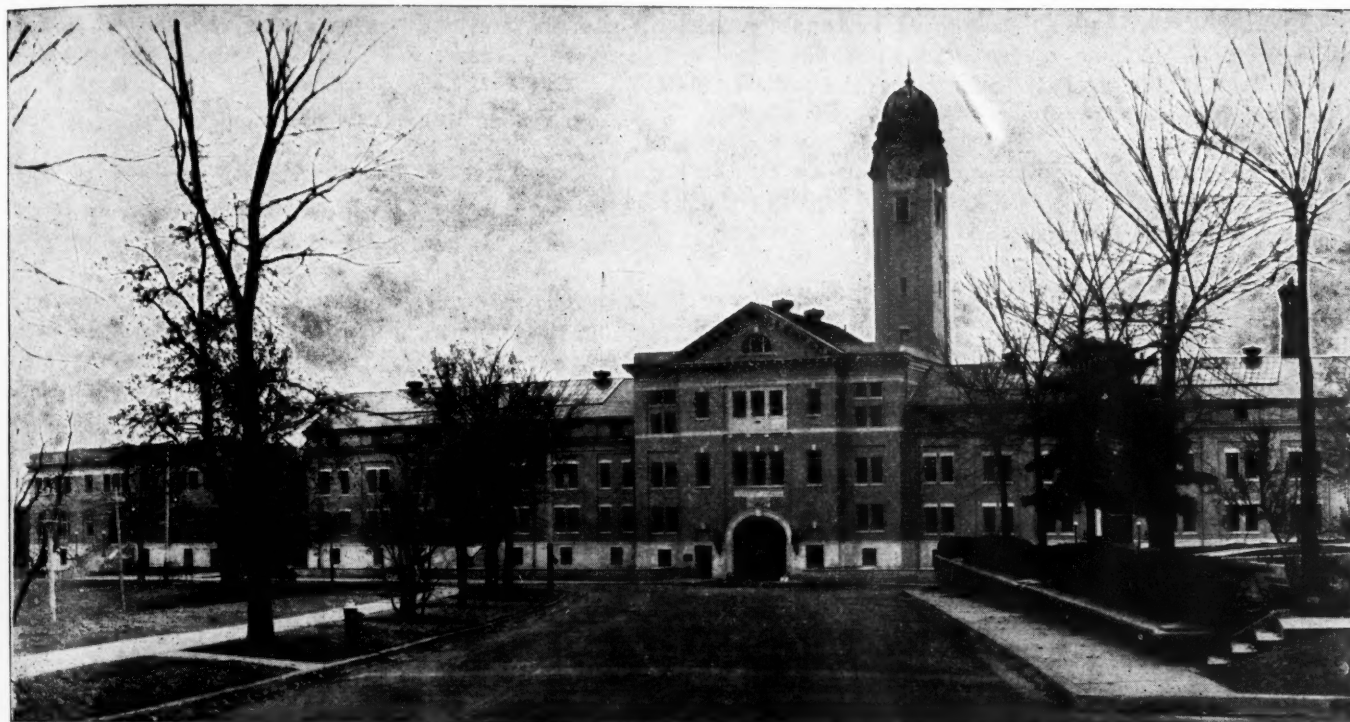
As soon as the first enemy defense line has been overcome the forces continue the advance. If the main hostile forces have been able to withdraw and reorganize, the division commander immediately prepares to launch another attack. He orders the forward displacement of his artillery and directs his subordinate commanders to make all preparations necessary for continuing the attack. The moment the enemy begins withdrawing the division commander immediately undertakes measures for the pursuit.

* * * * *

Main Uses of the "FIFTH COLUMN"*

1. Guiding troops to important localities, buildings and vital points.
2. Providing local information on enemy's dispositions; signalling objectives to hostile air force; assisting parachute troops.
3. Sabotaging defensive arrangements; for example, putting fire control system and telephone systems out of action.
4. Issuing orders contradicting mobilization, spreading false reports among defending troops in the hope of leading them to surrender, or giving false alarms in order to spread terror among the civilian population.
5. Spreading discontent among the masses.

*The expression "Fifth Column" was first used in Spain by Franco's General Emilio Mola as his army marched in four columns upon Madrid. At the time, Mola declared that in addition to these four columns, a *fifth column* waited inside the Spanish capital to welcome and assist his victorious troops.



Academic Notes

Current School Material, Which Affects Instructional Procedure or Tactical Doctrines

COLONEL K. B. EDMUNDS, Cavalry, *Acting Commandant*
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Doctrines of Withdrawal

BY LIEUTENANT COLONEL WILLIAM A. CAMPBELL, *Field Artillery*

Text: Field Service Regulations, 1939, pars. 557-565.

	Paragraph
General	1
The decision to withdraw from action	2
Conduct of the withdrawal	3
Conclusion	4

1. GENERAL.—*a.* The doctrines of any tactical operation merely state the basic elements, the controlling factors which must be considered in connection with such an operation. These doctrines are not fixed rules of action, to be applied with equal force in all cases, but they are inflexible to the extent that they should not be disregarded in any situation.

b. Though the doctrines remain unchanged, the methods by which the doctrines are applied will vary with the situation, and must be selected to fit different conditions.

c. A withdrawal from action is defined in *Field Service Regulations* (par. 557) as "the operation of breaking off combat with a hostile force." Please note that the withdrawal is limited to the breaking off of combat. It is not to be understood that all contact with the enemy is to be broken. Although the withdrawing troops do break contact, contact by reconnaissance agencies, once gained, should never be lost.

d. A withdrawal from action can seldom be considered as a complete tactical operation in itself. Nearly always it is undertaken as a preliminary to some other operation. When troops are once engaged in close combat, either offensively or defensively, a decision to break off the current action in order to conduct delaying action, to retire, to occupy a defensive position farther back, or to obtain troops for offensive action in another area, usually must include a decision to withdraw from action.

e. When troops are withdrawn from one position to occupy another, or to take up march formation on the road, the movement should be one continuous operation, without a break; but, for purposes of instruction, the withdrawal is considered as a separate tactical operation. The withdrawal proper begins when combat troops or service elements start movement towards the rear. The withdrawal proper ends when the command has obtained sufficient freedom of action to enable it to commence execution of the next operation. This will usually be when march columns are formed, or when the occupation of a delaying position or a rear defensive position is commenced.

f. The objective to which a force moves after a withdrawal depends upon the purpose of the withdrawal. When the withdrawal is made to save a force from a desperate situation, the first aim should be to place distance and obstacles between the force and the enemy. If the withdrawal

is to be followed by delaying action, or the defense of a rear position, the withdrawal may be made directly to the next position if the distance is short. When the distance is great, or when the withdrawal is to be followed by a retirement, the immediate objective of the withdrawal is usually an area where reorganization can be effected. For large forces such an area should be far enough from the original position to compel the enemy to displace his artillery before he can attack it successfully. From this area further movement is made in accordance with the principles of retirement.

2. THE DECISION TO WITHDRAW FROM ACTION.—*a.* To break off combat with a hostile force is by no means a simple operation if the hostile force is superior in combat power. With a superior enemy using every means in his power to turn an orderly withdrawal into a rout, the withdrawal from action becomes one of the most difficult of tactical operations to carry out successfully. When, then, will a commander be justified in undertaking such a task?

b. If a force is seriously threatened by strong hostile pressure, especially on its flanks, the breaking off of combat and a movement to the rear may be necessary to avoid destruction. An example can be found in the British withdrawal from Mons in August, 1914. This action was adopted to escape strong hostile pressure on their own front, and to conform to the retirement of the French on their right. There are many examples in which the immediate purpose of the withdrawal was to extricate the force from a critical situation or, possibly, to save it from destruction.

c. If we recognize that a withdrawal from action is appropriate under such conditions, we have started the formulation of our doctrine covering a decision to withdraw. This brings up the question: "What about the commander whose orders or mission require him to maintain his position at all costs, even to the sacrifice of his command?" In discussing the doctrine governing decisions, it must be assumed that a commander is free to make decisions. Obviously, this doctrine does not apply to a commander whose orders restrict him to a prescribed line of action.

d. But the situation need not be desperate to justify a decision to withdraw. A commander may withdraw to correct unfavorable dispositions. In 1917 Germany's extended fronts required so many men for their defense that it was almost impossible to hold out adequate reserves. A large salient between Arras and Soissons presented a total front of about 120 miles. Hindenburg prepared a fortified position extending generally across the base of this salient, the famous Hindenburg Line, which reduced the front to be held by about forty miles. His movement to the rear was a

complete surprise to the enemy, and was carried out with very little enemy interference.

e. A withdrawal may be made to break off an engagement which has already accomplished its purpose, or to break off an engagement which offers no further hope of success, as Lee did after Gettysburg.

f. It may be made to retire to ground more favorable for defense, or to place an obstacle between the opposing forces, as Hooker did in 1863 when he crossed the Rappahannock after Chancellorsville.

g. All of the operations mentioned have one feature in common. In each case it was necessary to break off an action already under way, in order to initiate some other action calculated to improve the tactical or strategical situation of the command. A decision to discontinue the current line of action in order to adopt some different line must be based upon the mission and the existing situation. Whenever a new plan of action requires troops in close contact with the enemy to carry out an operation which can not be initiated from the existing formation, the decision to adopt such a line of action will usually include a decision to withdraw from action. Consequently, a decision to withdraw may be a secondary decision. In such a case the action to be adopted following the withdrawal may be of secondary importance.

h. The doctrine concerning a decision to withdraw may be stated as follows:

A decision to withdraw from action is justified when the breaking off of combat is indispensable to the preservation of the command, or is essential to the initiation of action offering greater tactical or strategical advantage.

3. CONDUCT OF THE WITHDRAWAL.—a. *Hostile observation.*—(1) Having decided to withdraw troops from action, the most important decision concerning the conduct of the withdrawal is *when* to withdraw.

(2) The history of past withdrawals shows that most of those made at night have been successful, with comparatively small losses; while those made during daylight not only have usually been costly to the withdrawing force, but at times have resulted in its defeat and destruction. The Russian defeat at Tannenberg in August, 1914 is an example. These results were not entirely due to the fact that a withdrawal was initiated during daylight, or during darkness. We must realize that in some cases a daylight withdrawal was attempted only because the force was already in such a condition that it could not hold until dark; while those forces which made night withdrawals had, at least, been able to avoid defeat during daylight. The results indicate, however, that whenever conditions permit, a withdrawal should be made under cover of darkness.

(3) This is not entirely due to the need for secrecy, although this factor has great importance. Even though secrecy has been lost, and the enemy has full knowledge of our withdrawal, darkness is still of great value because it limits hostile observation. Darkness will not only slow down the rate of movement of any pursuing force, but will reduce the effects obtained by enemy artillery fire and combat aviation. Any delay obtained by obstacles will usually be greater during darkness than during daylight. When the

enemy cannot see, he cannot bring his full power to bear against the withdrawing force.

(4) It is the inability to conceal a daylight withdrawal that invites early pursuit and heavy losses. However, a daylight withdrawal cannot always be avoided. Strong pressure on the front, or a strong threat against the flank or rear may make a daylight withdrawal the lesser of two evils. In such a case an attempt to postpone the withdrawal until darkness may only increase the danger of the situation. Some daylight withdrawals have resulted in disaster because the withdrawing force, hoping to be able to hang on, has delayed too long before starting the movement.

(5) When a daylight withdrawal is forced, the effectiveness of hostile observation may be reduced by the use of smoke, but the smoker must take care that he does not handicap himself by screening the hostile advance from the fire of his own covering forces. Of course, full advantage should be taken of the cover afforded by the terrain, such as ridges and woods; and antiaircraft artillery and combat aviation should be used against hostile air observation. Conditions of low visibility caused by fog, rain, or snow also limit hostile observation, and may assist in breaking off combat.

(6) With these considerations in mind, we may draw the conclusion that every withdrawal should be so conducted as to *limit hostile observation to the utmost.*

b. *Rear areas.*—(1) When combat troops withdraw from contact they are forced to move straight to the rear until they can get clear of hostile fire. This movement takes them through the rear areas of the command where the trains, service elements, and administrative establishments are located. If the combat troops are not to be interfered with, and if confusion is to be avoided, these rear areas must be cleared early. At Gettysburg, General Lee started his trains and some of his wounded to the rear a whole day before the combat troops began their movement.

(2) If lack of time prevents the evacuation of all supplies, it may be necessary to destroy some material to prevent its falling into the hands of the enemy. Usually there will be casualties to evacuate; and the reconnaissance, repair, and marking of routes may be necessary. Sufficient control must be exercised over all these movements to prevent their betraying to the enemy the fact that a withdrawal is intended.

(3) It is obvious that this task is common to all withdrawals, and should be included in our doctrine. It is therefore prescribed that in the conduct of the withdrawal, the commander should *provide for timely clearance of rear areas.*

c. *Covering forces.*—(1) *General.*—By fire and movement, an attacker exerts pressure upon the defender. Troops engaged with the enemy, and under hostile pressure, can move in only two directions: straight to the front, or straight to the rear. Because of the hostile pressure we may expect that any movement of the defender's firing line to the rear will be followed up by a corresponding advance of the attacker, especially during daylight. For this reason, in order to break off combat, troops closely engaged must be relieved from hostile pressure. This relief is provided by covering forces. One of the basic distinctions between the execution of a daylight withdrawal and a night withdrawal

lies in the difference in the composition, the location, and the method of employment of these covering forces. In a night withdrawal in order to be able to fire freely without danger of hitting friendly troops, the covering force must be placed in line with or in front of the main forces of the withdrawing troops. In a daylight withdrawal the covering force, being able to see, is placed in rear or on a flank of the withdrawing troops.

(2) *Daylight withdrawal.*—(a) In a daylight withdrawal the actual disengagement of the firing line is made under the protection of local covering forces, formed by local commanders. For example: assume a situation in which an infantry regiment, holding a portion of a defensive position, has two battalions occupying centers of resistance and one battalion in reserve. Each front-line battalion has two companies on the main line of resistance and one in reserve. To commence a withdrawal during daylight, the commander of an engaged rifle company must often establish his own local covering force to protect the disengagement of his forward elements. Having seen these forward elements take up an orderly movement towards assigned assembly areas, and having assured himself that he can rely upon the local covering force of the battalion, he orders the withdrawal of his own covering force and moves to the rear to supervise the reorganization of his company. The covering force of the battalion (the battalion reserve company) is similarly withdrawn under protection of the regimental reserve. The battalion reserve joins the original front-line companies in the battalion assembly area, and moves to the rear.

(b) To cover the withdrawal of the regimental reserve the force commander designates a general covering force, usually composed of the general reserve if one is available; if not, then of the most available troops, probably the first units withdrawn. This general covering force usually has artillery attached to it, and may have cavalry, engineers, antitank units, and other special troops. It should be no stronger than is necessary to cover the withdrawal and block pursuit.

(c) The general covering force may employ defensive action, or may counterattack the pursuing force. Successful counterattacks create conditions most favorable to withdrawal of the main body, but may also increase the difficulty of withdrawing the covering force itself. If the covering force defends, it should be so placed that it can cover the withdrawing troops with its fire without becoming involved in the withdrawal. This will usually require a position fairly well forward on the flank, or on higher ground to the rear. Here it will cover the progressive local withdrawals already described, until the last of the local covering forces is withdrawn past it, or through it.

(d) The artillery assists the infantry in breaking contact. Some artillery is usually attached to the general covering force. The remainder of the artillery withdraws by echelon in time to avoid coming under aimed fire of infantry weapons. If the situation will permit, each echelon, when withdrawn, moves to the rear without occupying new positions. If the situation is critical, each echelon occupies additional positions in rear, to provide continuous support until forces have been disengaged. If the enemy pressure is so great that these measures are not sufficient, it may be

necessary to attach single guns, platoons, or batteries to local covering forces to enable the main body to break contact, even though the later withdrawal of such attached artillery will not be practicable.

(e) The time of withdrawal of the general covering force is fixed by the higher commander. If the withdrawal is to be followed by a retirement, the general covering force may form the rear guard; if it is to be followed by delaying action this covering force may occupy the first delaying position; if the withdrawal is to another defensive position in rear, this covering force may constitute the outpost of the new position. In case the general covering force, perhaps hastily improvised, becomes closely engaged, or is found to be unsuitably disposed or of insufficient strength to accomplish the missions just mentioned, a separate security force should be constituted to protect the main body, the general covering force reverting to unit control.

(3) *Night withdrawal.*—(a) In a night withdrawal the bulk of the infantry begins withdrawing shortly after dark, from the battalion reserve line and the regimental reserve line, if they are occupied, as well as from the main line of resistance. As it moves to the rear, each front-line battalion leaves in position a covering force or shell made up of small detachments. For deception, and to enable them to fire effectively after dark, the units comprising this type of covering force are left in their original combat positions.

(b) A front-line company in defense will frequently organize a strong point consisting of three combat posts, each garrisoned by one platoon. If the company is to withdraw the equivalent of two platoons and leave in the covering shell detachments covering the entire original front without change of position, it is obvious that one full platoon will not be left behind, but portions of all three platoons. As a result, there may not be a single complete platoon in the covering shell on the entire front of a division, but there may be a detachment of some sort from each platoon originally in position on that front. The effect of this is to keep the entire front covered, while greatly reducing the number of troops used to cover it. One purpose, of course, is to lead the enemy to believe that no change has taken place. To deepen this impression, both infantry and artillery units remaining in position should maintain a rate of fire sufficient to simulate normal activity of the entire force.

(c) Because the commander of the whole force cannot know in detail the particular situation within each front-line battalion, he is not prepared to fix the strength of each detachment to the left in the covering shell. Hence, it is usual to leave the number, the location, and the strength of the separate groups to be determined by local commanders. The force commander may control the total strength remaining in the shell by prescribing, for example, that not to exceed the equivalent of one rifle company and one platoon of the heavy weapons company shall remain in the shell for each battalion in contact. Subordinate commanders are thus restricted in the strength to be left behind, but may dispose this strength to the best advantage to meet local conditions.

(d) The bulk of the artillery is withdrawn in time to clear the roads to be used by the infantry. A portion of both the light and medium artillery remains in position to support the covering shell; either one gun per battery, or one battery per battalion being so employed. They execute suf-

ficient fire missions to simulate the presence of normal artillery on the front. It may seem to be impossible for one gun to simulate the fire of an entire battery, but the employment of single guns for routine night firing usually will not differ greatly from normal procedure. In the protracted defense of any position, it is customary to employ single weapons in temporary positions during the night; both to confuse the enemy as to the amount of artillery present, and to conceal the location of the battle positions of the artillery.

(e) Because of the wide dispersion of the small infantry groups remaining in position and the lack of adequate communications, it is impracticable for any single commander to exercise control over the covering shell of a large force. Usually the detachments remaining on each battalion front operate as a single independent unit under a designated sector commander. Mutual support is arranged between commanders of adjoining battalion sectors. Through liaison sections, artillery units supporting the shell maintain contact with these sector commanders.

(f) The covering shell should remain in position at least until the security of the main body is assured. This will usually be when it has gained the protection of an outpost on a new position, or has established a rear guard for further movement to the rear. Because of the great difficulty of communication and control in such a situation, the force commander should never direct the covering shell to hold until further orders. In many cases, such orders relieving the covering shell would never reach the front-line troops. The withdrawal order should prescribe a definite time at which each covering shell is to withdraw. Whenever practicable, a simultaneous withdrawal of all units in the covering shell is preferred.

(g) To give the shell itself a reasonable opportunity to effect a safe withdrawal to a protected area, it should withdraw at least two hours before daylight. Whenever practicable, motor transportation should be provided for the movement of the shell to the rear; especially if the distance to be covered is very great. As the covering shell is composed of many small detachments from a large number of organizations, without normal facilities for command or communication, it is not capable of coordinated action during its movement to the rear, whether it moves on foot or by motor. It is not suitable for employment as a delaying force or as a rear guard. It should move by the most direct route to battalion or company assembly areas, where the detachments may rejoin their organizations.

(h) If cavalry is available, patrols should be placed across the zone of withdrawal in rear of the covering shell before the shell withdraws, to maintain contact with the enemy and delay his advance. The presence of these patrols on routes favorable to the pursuing force will frequently be sufficient to block its advance during darkness, and will provide some protection for the movement of the covering shell to assembly areas.

(4) In either a day or a night withdrawal, regardless of the means employed, whether we use a local covering force or a general covering force or a covering shell; whether we disrupt the enemy advance by artillery fire or by counter-attack, the purpose behind all of these actions is the same, and the necessity for accomplishing this purpose is present

in all withdrawals. The conduct of the withdrawal should *relieve engaged troops from hostile pressure.*

d. *Coordination.*—(1) In either a day or a night withdrawal, when flanks are secure, the road net ample, and other conditions warrant, all units of the command, except covering forces, may be withdrawn simultaneously. However, a restricted road net or variations in hostile pressure will frequently make it necessary to prescribe a sequence of withdrawal. It may sometimes be possible to withdraw first the units which are most exposed, or hardest pressed; but more often it will be necessary to leave them to the last. In some cases it may not be possible to withdraw them at all. When the attempt to withdraw a single unit will jeopardize the entire command, the single unit should be sacrificed. The time at which units are to withdraw should be announced early enough to allow for necessary preparations. For a night withdrawal this will include the daylight reconnaissance of routes.

(2) If the road net permits, the main infantry units are usually assigned zones of action, especially if they may have to fight while moving back. The trains, the artillery, and other units which withdraw under centralized control are assigned routes. Both routes and zones of action should extend back to the objective of the withdrawal. The use of guides and the prescribing of priority on available routes will facilitate full use of the road net.

(3) Control of subordinate units withdrawing from action is not only especially desirable, it is also especially difficult. By prescribing the time of withdrawal, zones of action, routes, priorities, and objectives, the commander of a withdrawing force makes every effort to *insure coordination and control.*

e. *Disengaged forces.*—(1) We can expect that a superior enemy, learning of his opponent's intention to withdraw, will take prompt action to commence pursuit. This will probably take the form of increased pressure on the rear of the withdrawing force, accompanied by efforts around one or both flanks to block the withdrawing columns, or to strike them in flank.

(2) When a force withdraws from action for a movement to the rear, the operation is just the opposite of the development and deployment of the force. Troops break contact by moving straight to the rear, at first, in deployed lines. When clear of hostile small-arms fire they begin that progressive assembly of units which leads to reorganization. Individuals are gathered into squads, squads find their platoons, platoons are united to make companies, and finally battalions and regiments may be reassembled in designated areas. During the early part of the withdrawal we can expect that troops will be somewhat disorganized, and more vulnerable to attack than usual. The commander must be especially alert to prevent hostile interference with them at this time.

(3) In a daylight withdrawal this purpose is served in part by the establishment of a general covering force, perhaps on a threatened flank. At night it may require the posting of reserves on dangerous avenues of enemy approach, and the use of motor transport for movement of the covering shell. As already mentioned, the covering shell is composed of many small detachments from a large number of units. These small detachments should rejoin their re-

spective organizations before any further effort is required of them. If an organized force is desired to delay or canalize the enemy advance after daylight, a covering force of all arms should be designated for this purpose. The fact that a withdrawal is made during darkness does not remove the need for a general covering force under such circumstances.

(4) To block, hamper, or delay the enemy pursuit, chemicals, antitank weapons, demolitions, and obstacles will be of great assistance in either day or night withdrawals.

(5) Without regard to the methods used, one important factor is common to all withdrawals: the conduct of the withdrawal should insure the freedom of action of forces which have been disengaged.

f. Reorganization.—(1) Some disorganization is to be expected when troops in contact withdraw across country in deployed lines, especially at night. We must not forget that a considerable degree of disorganization may have existed before the withdrawal commenced, as a result of previous combat. When a covering shell is employed in a night withdrawal, the troops comprising it are practically lost to the force commander until they have rejoined their units.

(2) It is quite obvious that reorganization is necessary for control, and that control will increase as the reorganization progresses to the higher units. This will be accomplished in assembly areas, designated by each commander for his own subordinate units. All units should be assigned assembly areas which can be easily identified; which are screened from air observation; and are protected from observed fire of enemy artillery and machine guns. These areas will be located farther and farther to the rear as the units assembling in them become progressively larger.

(3) If the withdrawal is made to a rear defensive position not too far back, battalion assembly areas may be assigned on the new position. Regimental and brigade assembly areas, if employed at all, are usually in locations protected by the new outpost, or the rear guard.

(4) It is true in all withdrawals, but of particular importance in night withdrawals, that *the conduct of the withdrawal should provide for reorganization.*

g. Secrecy.—(1) The advantages to be obtained by limiting hostile observation have been mentioned. Besides keeping the enemy from seeing what we are doing, in a withdrawal it is especially important to keep him from know-

ing what we are doing or going to do. In a daylight withdrawal the maintenance of secrecy is seldom possible; but every effort should be made to preserve it during a night withdrawal, and to maintain it as long as possible during daylight.

(2) An alert enemy, suspecting an intention to withdraw, will almost certainly be on the lookout for indications of a withdrawal, such as the movement of trains to the rear, or the rearward movement of small groups of combat troops across country. Therefore, until dark, any unusual movement should be avoided, and all rearward movement should be limited to that necessary for reconnaissance by very small groups of individuals, or single vehicles. The radio should be controlled so that its use, or changes in its use, do not indicate the intention of the commander. Of course, the use of lights during the movement must be prohibited.

(3) In the past it has been possible for a carefully planned night withdrawal, not suspected by the enemy, to break contact with a hostile force with little difficulty. In an effort to obtain such results in the future, *the conduct of the withdrawal should preserve secrecy.*

4. CONCLUSION.—These doctrines, listed below, present important considerations affecting a successful withdrawal. They state what must be done; they do not tell how to do it. The importance of each doctrine will vary with the situation, but no one of them should be disregarded in any withdrawal.

DOCTRINES OF THE WITHDRAWAL FROM ACTION

1. A decision to withdraw from action is justified when the breaking off of combat is indispensable to the preservation of the command, or essential to the initiation of action offering greater tactical or strategical advantage.

2. The conduct of the withdrawal should:

- a. Limit hostile observation to the utmost.
- b. Provide for timely clearance of rear areas.
- c. Relieve engaged troops from hostile pressure.
- d. Insure coordination and control.

e. Insure freedom of action of forces which have been disengaged.

f. Provide for reorganization.

g. Preserve secrecy.

Withdrawal From Action

Operation of the German 5th Landwehr Division in the St. Mihiel Salient

Night 12-13 September, 1918

HISTORICAL ILLUSTRATION

BY MAJOR WM. P. BLEDSOE, *Field Artillery**

Every student of military science and tactics is constantly seeking for records of battles which illustrate the

*Abstracted from "Individual Research" by Captain H. L. Egan, Infantry.

application of *doctrines* as enunciated in military texts and from the platform of military schools.

In this study we wish to consider the operation of a unit in a withdrawal from action—the operation to have taken

place in modern times; and the unit to be comparable in size, organization, and equipment to a present-day American division. These conditions are fulfilled in the operations of the German 5th Landwehr Division in its withdrawal from action night 12-13 September, 1918, in the St. Mihiel Sector.

This division was a part of the German Army Detachment "C" which held the St. Mihiel Sector at this time. The staff of this army had been aware that there were preparations for an offensive by the Allies since the first of September, and request had been made to GHQ for permission to withdraw to the Michel I position at once (see Map No. 1). This was granted on 10 September. Detailed plans for the withdrawal of the army had been worked out previous to this time, and a plan, which was the combination of two previously prepared plans, was ordered into execution. On 11 September, all front-line divisions were ordered to withdraw during night 11-12 September to the Artillery Protective Line (regimental reserve line) (see Map No. 1).

The order of battle of the American First Army and the German Army Detachment "C", as of midnight 11-12 September, is as shown on Chart No. 1. The attack of the American First Army began on 12 September at 2:00 AM (German time) with a four-hour artillery preparation.

This preparation started suddenly, initially on the east of the Meuse, then extended west along the entire front of Army Detachment "C" (see Chart No. 1). The fire was strongest against Group Gorz, especially on the boundary between the 10th Landwehr Division and the 77th Reserve Division. It was somewhat less forceful against Group Combres and was very light against Group Mihiel, of which the 5th Landwehr Division was a part.

At about 6:15 AM, 12 September, the Allied attack was launched, its main effort being directed against Group Gorz and particularly against the 77th Reserve Division, which was holding approximately 13 kilometers of front in the most exposed sector.

A secondary attack was launched against Group Combres—the 13th Landwehr Division and the Royal Austrian 35th Division receiving the brunt of the attack.

The Mihiel Group apparently received a holding attack only.

With the above brief outline of the situation of Army Detachment "C", we will now consider in detail the execution of the withdrawal by the 5th Landwehr Division, occupying the southern extremity of the St. Mihiel Salient, which illustrates a withdrawal, successfully executed under most adverse and trying conditions.

This division had, prior to this time, been used only as sector or defensive troops. In combat value in 1918, it was rated as a 4th Class division, the lowest of four classifications.

"In 1918 it held the Apremont sector continuously, showing no initiative or capacity for offensive operation, but due to the small losses and heavy effectives, it offered as much resistance to our attack in September as did the other German divisions in the salient." This quotation from "Two Hundred and Fifty-One Divisions of the German Army."

The division was organized, as were all German divisions in 1918, with one brigade, the 30th Landwehr, consisting of three regiments, the 65th, 25th, and 36th, each

regiment with three battalions of four companies each, and a regimental minenwerfer company. Divisional troops consisted of the 256th Landwehr Field Artillery Regiment, with a light ammunition column; the 2d Squadron 16th Uhlan Regiment of Cavalry; the 405th Pioneer Battalion; 505th Signal Command; and Medical and Transport columns.

The normal employment of German divisions in the defense, i.e., regiments abreast, each regiment in column of battalions, was used in the sector held by the 5th Landwehr Division, except initially in the 65th Regiment. (See Chart No. 2.)

A front-line battalion in each regiment held the regimental sector from the outpost line to the main line of resistance, inclusive, and was termed "assault battalion."

The second-line battalions were called "support battalions" and the rear battalion in each regiment was normally in regimental or division reserve, in a rest area or camp in the rear, and was termed "reserve or rest battalion." Artillery was disposed in depth, and its fires highly organized. These employment terms were used to designate the battalions in all reports and summaries of all higher units, instead of their numerical designation.

Chart No. 2 and Map No. 1 show the initial dispositions of the 5th Landwehr Division just prior to the retirement to the Artillery Protective Line (retirement to this line began early part of night 11-12 September and was to be completed by 4:00 AM, 12 September).

The infantry attack (by the French 39th Division) started at 7:00 AM, mainly against the left of the 25th Regiment and the right of the 65th Regiment (see Map No. 1). This attack did not proceed far until it was driven back to its line of departure by counterattacks which were launched at once by the local reserves of the front line battalions.

The defense by these front-line battalions was ably supported by the fire from the artillery. Only one battalion, however, was in position to fire, as the remainder had withdrawn to army and group reserves.

Another French attack was launched at 8:15 AM, following a hostile artillery preparation. This attack also was repulsed by the heavy machine-gun fire of the 25th Regiment.

This situation prevailed until noon 12 September, when a deep penetration toward Thiaucourt on the front of the Gorz Group caused the issuance of the "Loki" or withdrawal order by the Army.

Group Mihiel, at once, issued orders to divisions in substance as follows (see Map No. 1):

The withdrawal to start without delay. The defensive position to be changed to the Schroeter Zone (about 3 to 5 miles to the rear), right flank of the group to be one kilometer east of Deuxmounds, left flank to rest on Lake Champrez.

This zone to be held until further orders, and the forces to be grouped for a stubborn defense.

Rear guards to engage the enemy, and to retire on the Schroeter Zone only when forced to do so by the enemy. In such an event they are to retire, exploiting every opportunity between positions, to damage the enemy without becoming definitely committed in an engagement the outcome of which could not be predicted.

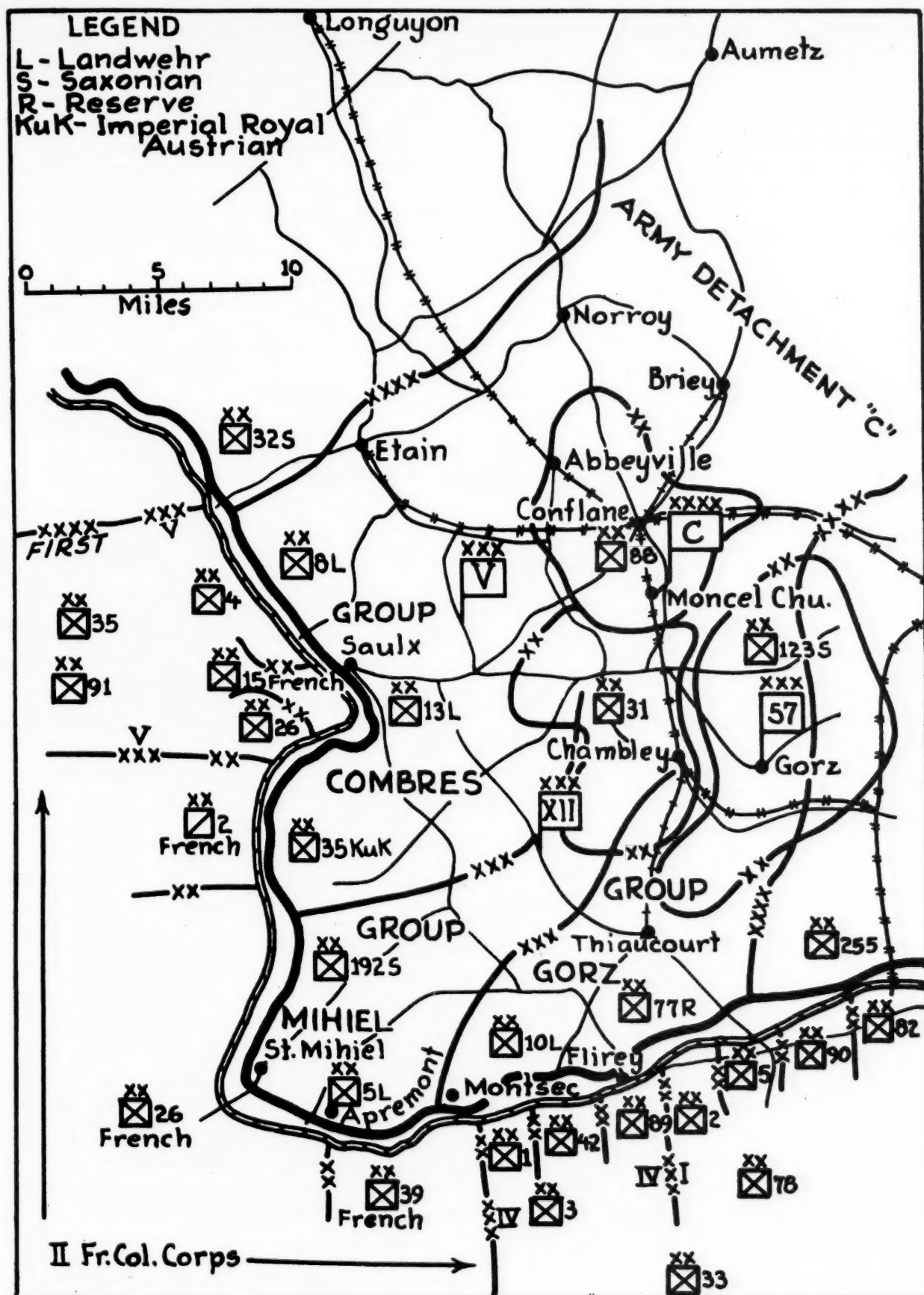


CHART No. 1

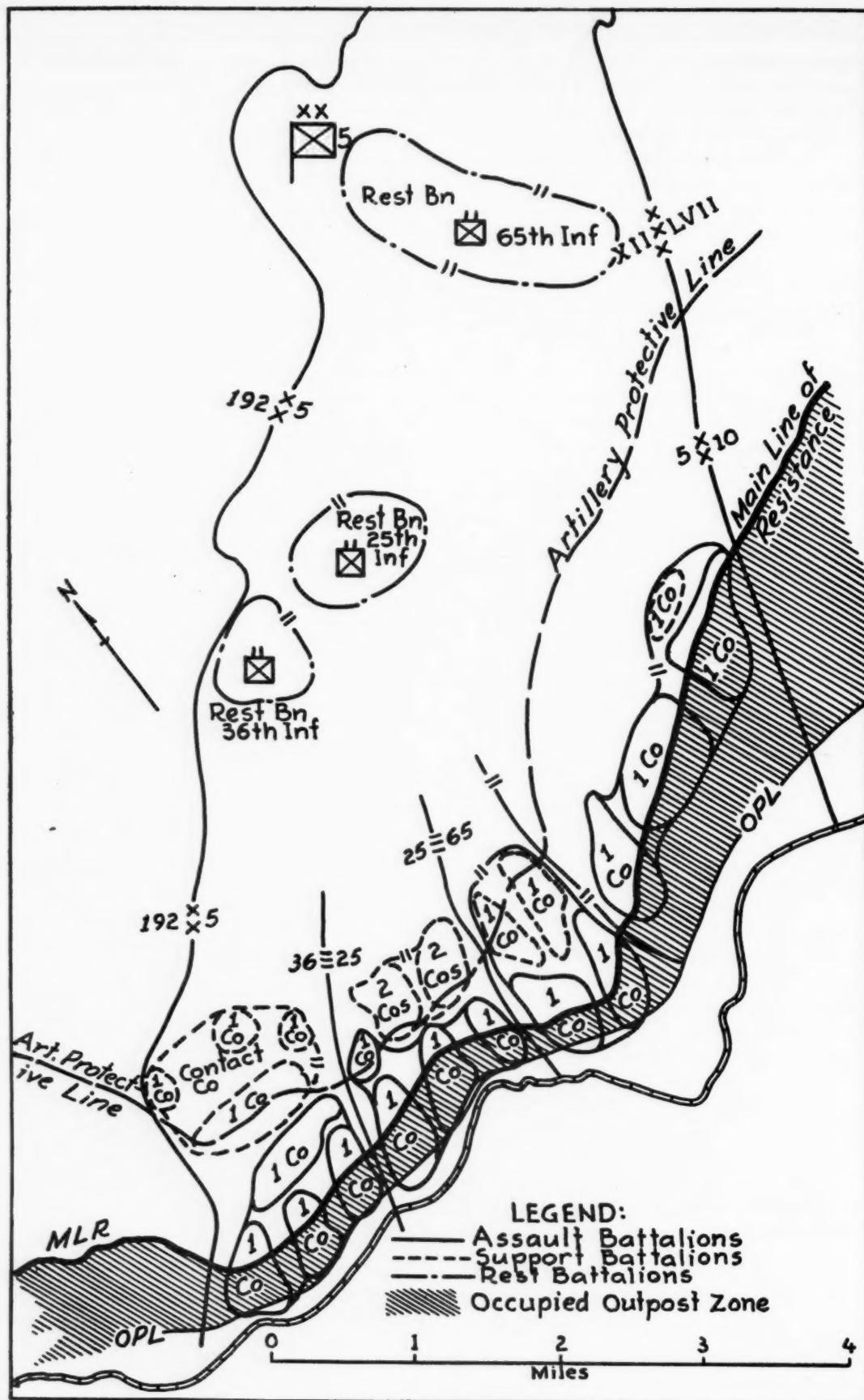


CHART No. 2

Covering forces of the divisions for the new position to establish contact with the flanks of the adjoining groups and with each other.

Only guns already attached to the forward combat battalions to be left forward of the Schroeter Zone.

Remaining artillery to be withdrawn in rear of Schroeter Zone at once and employed as required there. All batteries which can be dispensed with will be made ready for the march to Michel I Zone.

All demolitions which have been prepared to be executed. All water supply to be destroyed or rendered unfit as previously ordered.

The 5th Landwehr Division, upon receipt of this order, immediately directed the "rest battalions" of the 25th Regiment and the 36th Regiment to occupy the Schroeter Zone at once, and the artillery to move by echelon to positions in rear of this zone.

If further ordered the support battalions of all regiments to withdraw to the rear of this zone as division reserves.

The combat battalions to remain until 8:00 PM (dark), when they were to withdraw, starting from right to left, leaving strong officer patrols behind to oppose the enemy and maintain continuous contact with the unit on the left.

While these movements were being directed, Group Headquarters ordered the rest battalion of the 65th Regiment to march toward Nonsard, and upon arrival, to be at the disposal of the 47th Regiment of the 10th Division.

At the same time, the division ordered an assault company to march toward St. Benoit to protect the division headquarters.

At 2:00 PM, the division was notified that the enemy had captured Pannes and Nonsard and later at 3:00 PM, that enemy forces with tanks preceding, were advancing from Nonsard toward Heudicourt.

The division then ordered the rest battalions of the 36th and 25th Regiments (at that time marching to the Schroeter Zone) to deploy for counterattack against this hostile threat to the left flank, and to drive the enemy east of Nonsard, and then to cover the left flank of the division. This order did not reach the battalion of the 36th Regiment, but the battalion of the 25th Regiment moved at once in the new direction, and upon arrival at the edge of Bois de Nonsard at about 4:14 PM, made contact with the rest battalion of the 65th Regiment which had previously been ordered to Nonsard to the assistance of the 47th Regiment. This battalion of the 65th Regiment had found Nonsard occupied by the enemy and could not contact the 47th Regiment, so with its attached battery of artillery it had taken position at the south edge of the Bois de Nonsard to protect the flank of the division. (For disposition of the 5th Landwehr Division at 5:00 PM, 12 September, see Chart No. 3.)

At 2:40 PM, the division received the Group order not to halt at the Schroeter Zone, but to carry out the retirement to the Michel I position, as previously ordered, in one column, and to occupy the sector as shown on Map No. 1.

Division headquarters retired by echelon, leaving behind a center of communications. Headquarters was opened at St. Benoit at 4:00 PM. At this time, a composite battalion consisting of one company of each regiment which had been detached at 1:00 AM, 12 September, to work on Michel I

position under group orders and under the command of Captain Engleman rejoined the division. This battalion was inserted in the vicinity of Sebastopol Farm, just south of St. Benoit with orders to reconnoiter in the direction of Lamarche and Beney, and to cover the flank during the march of the division through St. Benoit.

The rest battalion of the 36th Regiment and the support battalion of the 25th Regiment had arrived as reserves in the (see Chart No. 3) Schroeter Zone by 4:00 PM, and at 7:00 PM, began their retirement to the Michel I position.

During the afternoon, the withdrawal of the combat battalions was carried out under the protection of strong officer patrols acting as rear guards. These combat battalions succeeded in disengaging most of their forces from the enemy. After assembling in the vicinity of Woinville, Buxerulles, and Heudicourt they joined the march column.

The route of march of the column was via the road: Heudicourt — Bois de Nonsard — Bois de Vigneulles — St. Benoit — on Dampvitoux. (See Map No. 1.)

During the march to the rear numerous camps were burned. The supply depot at Heudicourt, and ammunition depots in the zone of the division were destroyed either by fire or demolitions. The branch railroad at Heudicourt was demolished and combat matériel such as heavy minenwerfers (for which there was no transportation) were destroyed in place by demolition.

The trains and supply units of the division preceded the march column without event.

During this period a mixed Storm Battalion under command of Major von Puttkammer was formed at Briey from the personnel of the Machine-gun School, the Company Commander's School, and Noncommissioned Officers' School at that place. It was moved by rail to Chambley and assigned to the 5th Landwehr Division.

Major Puttkammer preceded his battalion and arrived at division headquarters at 6:30 PM. He was ordered, upon the arrival of his battalion, to occupy the right half of the Apremont sector of Michel I position, pending the arrival of the division. Puttkammer's battalion was reinforced, later, with the 1st Battalion 65th Regiment and occupied the assigned sector between 9:00 and 10:00 PM (see Map No. 1). Artillery was already present and ready to fire. Part of this artillery having been moved from the Schroeter Zone during the afternoon.

The march column moved directly through the main line of resistance of Michel I position to the area: (See Map No. 1) Hageville—Chambley, and by 8:00 AM, 13th September, was assembled and reorganizing in that area.

Engleman's battalion, which had been left as flank protection southwest of St. Benoit was withdrawn during the morning of 13 September.

The division, despite a severe threat against its left flank, had withdrawn from action, marched from 18 to 21 miles, and was safely installed in the Michel I position. The division had a total loss of 11 officers and 612 men killed, wounded, and missing; and a loss of matériel of 51 machine guns, 13 minenwerfers, and two guns of the light artillery (these by burst of the bore).

The evacuation of able-bodied civil inhabitants in the forward zone was carried out by the division without serious difficulty during 12 September.

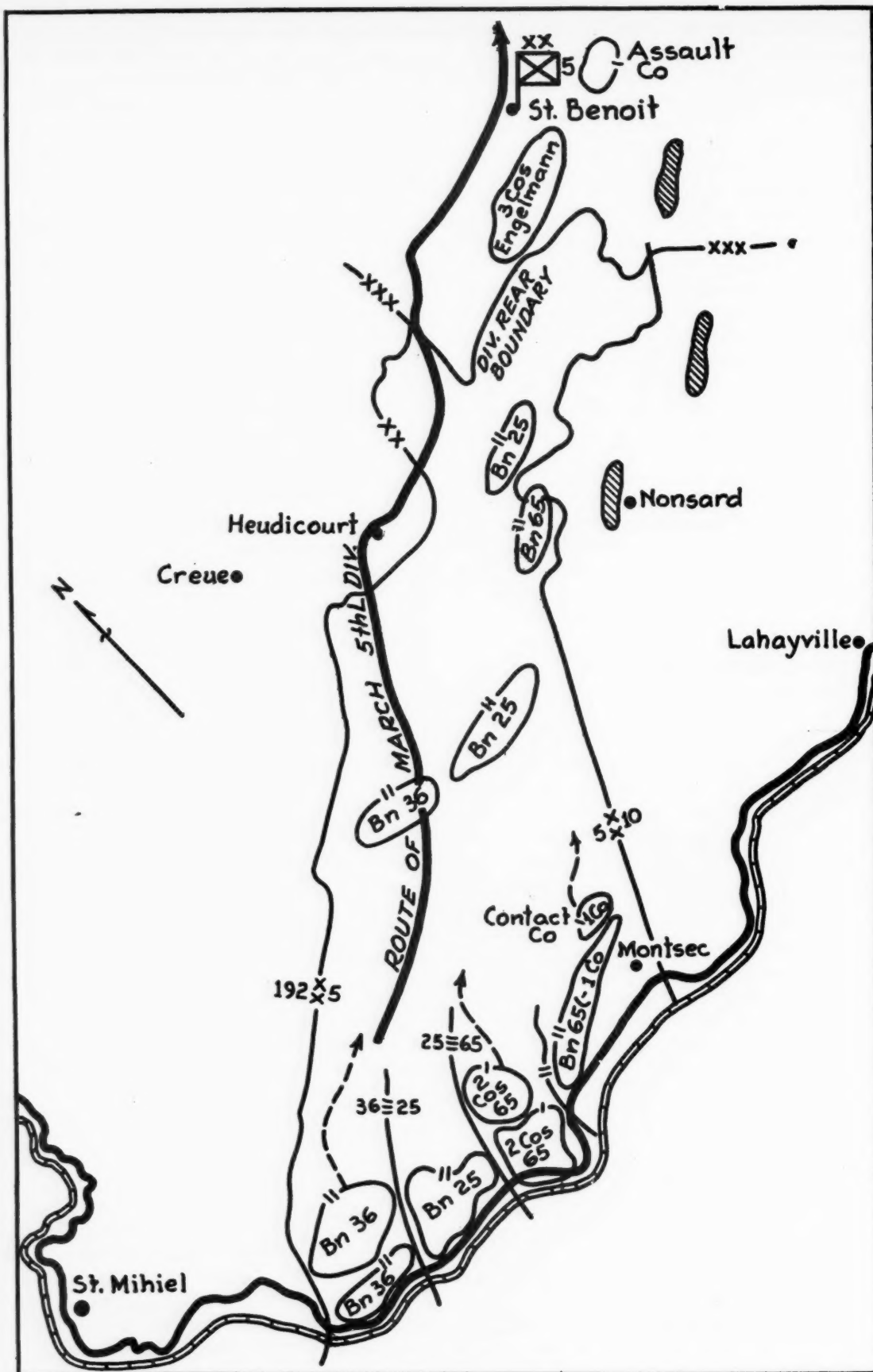


CHART No. 3

General von Lewinski states: "That the division succeeded in reaching the Michel I position with no greater losses . . . may be attributed to the excellent morale of the troops and of the officers, and to the excellent functioning of the means of communications."

At no time during the period of the withdrawal was the division without communication to brigade and regiments. Communication to Group was disrupted for a short period only. The final disposition of the division after the withdrawal was as shown on Map No. 1.

In the action of the 5th Landwehr Division we find illustrated many of our principles on withdrawal, as stated in FM 100-5 (Tentative Field Service Regulations—Operations).

1. Paragraph 559, FM 100-5: "A withdrawal by daylight involves such heavy losses and so great a degree of disorganization that it is usually preferable to hold out at all costs until nightfall and effect the withdrawal under the cover of darkness. As a rule, only rearward echelons can be withdrawn by day."

2. Paragraph 560, FM 100-5: "The troops engaged stubbornly hold their position. * * *

"The commander makes special provision for holding as long as possible the road centers that control the communications to the rear, * * *.

"Successful counterattacks create the conditions most favorable to the withdrawal. * * *

"When the rearward or assembly position lies at a considerable distance from the battle front the commander selects a suitable covering position and details, from any available reserves, * * * to occupy it and cover the withdrawal of the troops engaged. * * *"

3. Paragraph 563, FM 100-5: "The withdrawal of the greater part of the forces engaged commences at nightfall; only weak elements are left in immediate contact with the points. * * *

"The withdrawal is executed on a broad front; troops retire in small columns and after passing the covering position are assembled into larger units at designated initial withdrawal by simulating great activity. * * *"

"The elements left in contact with the enemy screen the withdrawal by simulating great activity. * * *"

The combat battalions of the 5th Landwehr Division remained in contact until 8:00 PM, when they withdrew, starting from the right, leaving strong officer patrols behind to oppose the enemy and maintain continuous contact with units on their left.

The rest battalions of the 36th and 25th Regiments were ordered to deploy for counterattack against the hostile threat to the left flank of the division and to drive the enemy east of Nonsard, and then to cover the left flank of the division. This covering position was taken at the south edge of Nonsard Woods.

When the withdrawal to Michel I position was ordered the division, at once, placed Engleman's battalion in the vicinity of Sebastopol Farm, south of St. Benoit, to cover the march of the division through the town and to protect the important crossroads.

The combat battalions succeeded in disengaging most of their forces under the protection of strong officer patrols, and joined the march column after assembling in the vicinity of Woinville, Buxerulles, and Heudicourt.

In criticism of the withdrawal, it is believed that the army should have adhered to one of the two plans for withdrawal which had been prepared prior to the time of the hostile attack, rather than adopt a third plan (a combination of the two previously prepared plans) which was adopted and issued just prior to the time the withdrawal became necessary. The modification of a plan immediately prior to its execution presents certain dangers which may jeopardize the success of the maneuver.

The fact that each division had an unused cavalry squadron as an integral part of its force indicates a lack of appreciation of the value of this mobile arm in the withdrawal. All cavalry, as well as all mounts, were kept in the rear areas during the stabilized defense, and when the withdrawal was ordered they were left in the rear. The 5th Landwehr Division could have used its cavalry to great advantage on its left flank when the break in the line left that flank endangered.

In conclusion it is interesting to note that the 5th Landwehr Division, at the time this withdrawal took place, was rated as Fourth Class, and suited by training for the occupation of a quiet sector only. It had never been engaged during the entire four years of the war in offensive combat, except for a few minor raids in the vicinity of Apremont. Yet, on this occasion it executed a most difficult maneuver, a withdrawal, in a superior manner.

General Terrain Exercise No. 13

7 June, 1939

	Paragraphs
SECTION I. — Situation and First Requirement.....	1-3
II. — Second Special Situation.....	4-5
III. — A Solution.....	6-7
IV. — Discussion.....	8-12

SECTION I

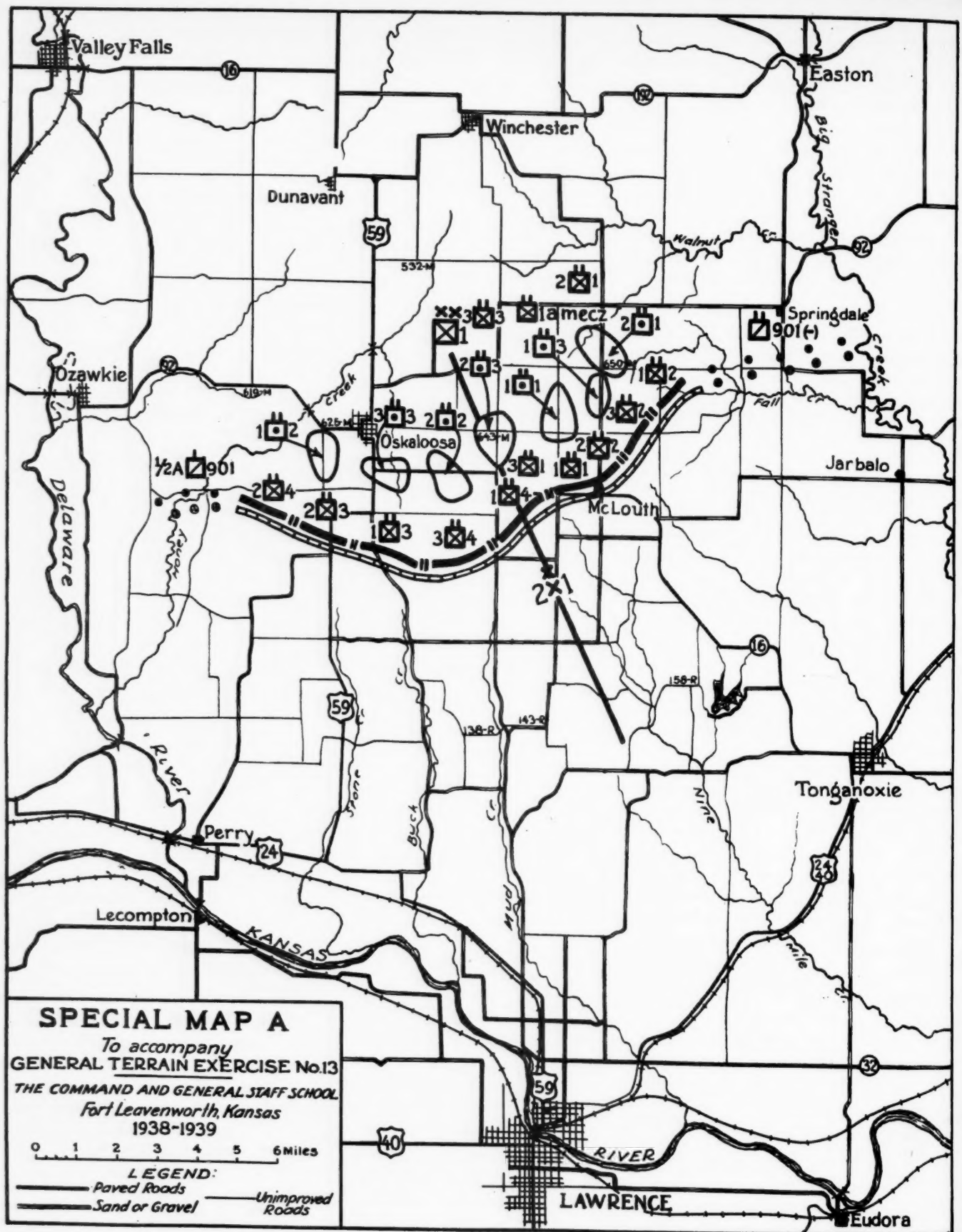
Situation and First Requirement

	Paragraph
General situation.....	1
Special situation (Blue).....	2
First requirement.....	3

1. GENERAL SITUATION. — *a. Maps.* — Special Map A, 1:63,360.

b. Boundary. — The Kansas River and the Missouri River east of Kansas City form part of the boundary between two hostile states, Blue (north) and Red (south).

c. Organization, equipment, and doctrine. — In general, Red and Blue organization, equipment and tactical doctrines are similar. Both sides possess combat aviation of all types and small mechanized forces.



d. *Opposing forces.* — Blue and Red main forces are engaged east of Carrollton, Missouri (about 77 miles east of Fort Leavenworth) with only minor detachments hitherto employed by either side west of Kansas City. Small Red detachments established bridgeheads north of the Kansas River, at Lecompton, Lawrence, and Eudora.

2. SPECIAL SITUATION (BLUE). — a. *Mission of the 1st Division.* — The 1st Division, reinforced, Major General A commanding, completed its concentration and advanced toward the border with the mission of driving Red forces south of the border, seizing the bridges at Lecompton, Lawrence and Eudora, and otherwise facilitating the advance of the I Corps, which is concentrating west of St. Joseph, Missouri, with the mission of invading Red territory west of Kansas City.

b. *Summary of events prior to 4:00 PM, 7 June.*

(1) On the afternoon of 5 June just south of Oskaloosa, the 1st Division attacked a Red reinforced brigade, identified as part of the Red 85th Division, and drove it to the south.

(2) Reliable information received during the day indicated that the Red 86th Division and the remainder of the 85th Division were preparing to leave their training area 100 miles south of Kansas City, by rail and motor.

(3) In the late afternoon of 5 June, the division commander received a message from the I Corps, in part as follows:

"The Corps plans to adopt the active defense. The remainder of the corps will advance, the leading elements of the 2d Division arriving in the vicinity of Winchester by motor during the early hours of the night 7-8 June. The corps commander will arrive during that night to take command. You will hold the enemy force south of the line: S.H. 72-A (road junction 727-M) — McLouth until daylight 8 June. The 1st Cavalry Brigade will reach the vicinity of Boling during the afternoon of 7 June and will delay any hostile advance east of Big Stranger Creek."

(4) The reinforcement of the Red brigade by a squadron of cavalry and by light and medium artillery during the afternoon, materially reduced the progress of the 1st Division toward the south. By 8:00 PM, 5 June, it had reached the line: road junction 113-R — road junction 138-R — road junction 158-R. At that hour the movement of the Red 86th Division and the remainder of the 85th Division, by rail and motor to the vicinity of Lawrence, was well under way and the Blue division commander decided to delay the hostile forces in successive positions, holding an initial delaying position along the general line: road junction 113-R — road junction 119-R — road junction 138-R — road junction 143-R — road junction 158-R until at least dark 6 June, and holding the enemy south of the final delaying position: S.H. No. 72-A (road junction 727-M) — road junction 841-M — McLouth until daylight 8 June.

(5) Red troop movements were completed shortly after noon 6 June and by 3:00 PM the Red forces launched a strong attack against the Blue initial delaying position, with the principal effort directed up the valley of Nine Mile Creek. By dark the attack had progressed so far in the broken ground on the Blue east flank that the division commander decided to withdraw under cover of darkness to the final delaying position. This was successfully accomplished during the night 6-7 June and by daylight the 1st Division was occupying the final delaying position with brigades abreast.

(6) Early on the morning of 7 June the Red forces began to follow up the Blue withdrawal. Considerable delay was

obtained by Blue covering forces operating in the broken ground between the delaying positions and by the cavalry on the east flank and it was noon before the enemy had closed to contact with the Blue position.

(7) At noon 7 June, the following message was received from the Blue I Corps:

"The advance of the I Corps has been unavoidably delayed. The 2d Division cannot arrive until midnight 8-9 June, when its leading elements will reach the vicinity of Nortonville by motor. The 1st Cavalry Brigade will not arrive in Boling until about dark 8 June. Thereafter, it will delay any hostile advance east of Big Stranger Creek as planned. The 902d Cavalry Squadron will reach the vicinity of Springdale about 7:00 PM today and is attached to your command. The 1st Division will continue to hold the enemy south of the line: S.H. 72-A — McLouth until daylight 9 June. No other elements of the corps will be available for your support prior to that time."

(8) Shortly after noon 7 June the Red force attacked along the entire Blue position but it soon became clear that the Red main effort was being directed against the Blue east flank. On the better ground of the final position the 1st Division was able to oppose much stronger resistance to the hostile blow and enemy progress was much slower. The heaviest attacks were made initially to the northeast and southwest of McLouth.

c. *Situation at 4:00 PM, 7 June.* — At 4:00 PM, 7 June, the division commander is in telephone conversation with the commanding general I Corps and has just outlined to him the situation of the 1st Division as shown on Special Map A. The corps commander has reiterated his intention of taking the offensive with the remainder of the corps upon its arrival in the Nortonville area and has emphasized his desire that the operations of the 1st Division hold the enemy as far to the south as possible and facilitate to the greatest degree the offensive operations of the I Corps.

In response to the queries of the corps commander, Major General A states his opinion of the capabilities of the 1st Division as follows:

"With two reserve battalions still available, I am confident that the 1st Division can hold the enemy on its present position until dark tonight. I do not believe, however, that the division can continue to hold this line throughout tomorrow. Failure to hold until dark 8 June will result in a withdrawal forced during daylight over open terrain containing very little cover, where the losses will be heavy and the difficulty of checking the enemy within any reasonable distance of our present front greatly increased. To avoid such losses, to reduce the surrender of ground to the minimum, and to facilitate the offensive operations of the I Corps, I recommend that the 1st Division be authorized to * * *

d. *Motor transportation.* — (1) Sufficient trucks are available in the 1st Division trains to transport the essential combat elements of one infantry battalion.

(2) Reliable reports indicate that Red has no trucks available for tactical use.

3. FIRST REQUIREMENT. — The recommendations of the division commander for the employment of the 1st Division until the arrival of the remainder of the I Corps (to include *what, when, where and how*).

NOTE

Daylight begins at 3:55 AM, darkness at 8:40 PM.

SECTION II

Second Special Situation

Special situation (Blue), continued.....	Paragraph 4
Second requirement.....	5

4. SPECIAL SITUATION (BLUE), CONTINUED. — *a. The recommendations of the division commander.*—At 4:00 PM, 7 June, the division commander recommended to the commanding general I Corps that the 1st Division be authorized to withdraw from action after dark 7 June, retire to a defensive position northwest of Honey Creek along the general line: S.H. No. 27-D (crossroads 619-M) — road junction 532-M — Winchester (road junction 349-M), inclusive, and defend it until the arrival of the remainder of the I Corps.

b. Action of the corps commander.—At 4:30 PM, 7 June, the corps commander approved the recommendations of the division commander but directed that the 1st Division, in addition, take the action necessary to maintain close contact with the enemy and delay his advance to the north.

c. The division commander's directive.—In his directive to the division staff for the withdrawal the division commander included the following:

"Have a general covering force consisting of * * * maintain close contact with the enemy and delay his advance to the north, holding him * * *."

5. SECOND REQUIREMENT. — So much of the plan of Major General A for the withdrawal only, based on the situation shown on Special Map A, as would be contained in paragraphs 2 and 3 of a complete, written field order, omitting aviation, anti-aircraft artillery, chemical troops, and line of communication troops.

SECTION III

A Solution

A solution of first requirement.....	Paragraph 6
A solution of second requirement.....	7

6. A SOLUTION OF FIRST REQUIREMENT.—At 4:00 PM, 7 June, the division commander recommended to the commanding general I Corps that the 1st Division be authorized to withdraw from action after dark, 7 June, to retire to a defensive position northwest of Honey Creek along the general line: S.H. No. 27-D (crossroads 619-M) — road junction 532-M — Winchester (road junction 349-M), inclusive, and defend it until the arrival of the remainder of the I Corps.

7. A SOLUTION OF SECOND REQUIREMENT. — Major General A plans:

a. (1) To withdraw from action with brigades abreast, beginning at 9:15 PM, and retire to a defensive position northwest of Honey Creek along the general line: S.H. No. 27-D (crossroads 619-M) — road junction 532-M — Winchester (road junction 349-M), inclusive.

(2) Boundary between brigades: The present boundary extended to the rear through road junction 641-M — road junction 532-M — road junction 435-M — road junction 320-M (all to the 1st Brigade).

b. (1) To protect the withdrawal with a covering shell composed of rifle and machine-gun detachments not to exceed the strength of one rifle company and one machine-gun platoon for each battalion occupying the main line of resistance, supported by one battery from each light and medium field artillery battalion. Infantry and artillery elements to be left in position without change of disposition and to simulate normal activity.

(2) Artillery elements of the covering shell to withdraw at 2:30 AM, 8 June, infantry elements at 3:00 AM, and rejoin their organizations by the most direct routes, reverting to unit control upon arrival.

c. (1) To organize under the command of Brigadier General 2d Brigade and establish initially on the general line: crossroads 643-M—crossroads 650-M—crossroads 543-M—Springdale, a general covering force composed of the 2d Battalion 1st Infantry, 3d Battalion 3d Infantry, 901st Cavalry Squadron (less ½ Troop A), 902d Cavalry Squadron, 1st Field Artillery (less detachments), 1st Battalion 3d Field Artillery (less detachments), Company A 1st Antimechanized Battalion, and 1st Battalion 1st Engineers.

(2) All units of the general covering force, except the field artillery, to pass to control of the general covering force commander at 8:00 PM and complete movements into covering positions by 9:30 PM; the field artillery (less elements supporting the covering shell) to be attached at dark (8:40 PM), maintain present positions until 10:00 PM, then withdraw to previously selected positions for the initial support of the covering force.

(3) The general covering force to protect the withdrawal of the covering shell, maintain close contact with the enemy and delay his advance to the north, holding him south of line: Winchester — Easton until dark (8:40 PM) 8 June, and reporting any hostile movement east of Big Stranger Creek.

d. The 901st Cavalry Squadron (less ½ Troop A) and the 902d Cavalry Squadron to be attached to the general covering force at 8:00 PM. One-half Troop A 901st Cavalry Squadron to cover the right of the division with withdrawal and report any hostile movement west of Honey Creek.

e. The 1st and 2d Brigades (less detachments) to withdraw beginning at 9:15 PM and retire to the new position within their zones of action. Each brigade to secure its flank of the division against mechanized attack. The 2d Battalion 1st Infantry and 3d Battalion 3d Infantry to be attached to the general covering force in their present positions at 8:00 PM.

f. The 1st Field Artillery Brigade (less detachments) to withdraw beginning at 8:45 PM and retire to the new position by the most direct routes within the zone of action of the 2d Brigade, clearing the road: road junction 625-M — crossroads 643-M by 10:30 PM. The 1st Field Artillery and the 1st Battalion 3d Field Artillery (less detachments in the covering shell), to be attached to the general covering force in their present positions at dark (8:40 PM).

g. The 1st Engineers (less detachments) to withdraw at 9:15 PM and retire to the new position by routes within the zone of action of the 1st Brigade. The 1st Battalion 1st Engineers to be attached to the general covering force at 8:00 PM.

h. The 1st Antimechanized Battalion (less detachments) to withdraw at 9:15 PM and retire via Highway 92 and the Winchester highway to the vicinity of crossroads 323-M, prepared

to move to meet a mechanized threat on either flank. Company A 1st Antimechanized Battalion to be attached to the general covering force at 8:00 PM.

i. To take every precaution to preserve secrecy.

Prior to dark (8:40 PM), circulation within the division area to be kept to a minimum and movement to the rear limited to small groups and individual vehicles.

Radio and telephone to be restricted to routine messages.

Withdrawal to be made without lights.

Priority on roads to field artillery and ambulances.

Persistent gas will not be used.

SECTION IV

Discussion

	Paragraph
Purpose.....	8
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8. **PURPOSE.**—This exercise is designed to illustrate a situation in which a division commander, forced by the pressure of superior hostile forces to act for the safety of his own command, so adapts his action to the situation as to further the operations of the corps.

9. **MISSIONS.** — a. The mission of the I Corps and the purpose for which it was concentrated, is to invade Red territory west of Kansas City.

b. The missions of the 1st Division, from the beginning, have been based on the mission and operations of the I Corps. Initially the mission was to drive Red forces south of the border, seize the bridges over the Kansas River held by the enemy, and otherwise facilitate the advance of the I Corps.

c. Anticipating the early arrival of strong hostile forces, the corps commander adopted the active defense and changed the mission of the 1st Division to require it to hold the enemy south of the line: S.H. 72-A — McLouth until daylight 8 June.

d. When the advance of the I Corps was delayed, the corps commander, on 7 June, amended the mission of the 1st Division to require it to hold the enemy south of the line: S.H. 72-A—McLouth until daylight 9 June. The mission is explicit and requires no interpretation.

10. **SITUATION AT 4:00 PM, 7 JUNE.** — Because of rapidly arriving Red reinforcements the 1st Division commander decided late on 5 June to accomplish his mission by delaying the enemy in successive positions. The decision was sound and at noon 7 June the division commander had good reason to anticipate its successful execution. By 4:00 PM, however, the situation has changed considerably. The mission of the 1st Division has been amended to require it to defend its present position for another day. The point of arrival of the remainder of the corps has been moved from Winchester to Nortonville and the hour of its arrival postponed for approximately 24 hours. The enemy is pressing his main attack against the division's east flank and the division commander, while confident of maintaining his present position until dark, does not believe he can hold for another day. At 4:00 PM, therefore, as the responsible commander on the ground and the one most familiar with the facts, he presents to the corps commander his conclusions as to the situation and his recommendations based thereon.

11. **RECOMMENDATIONS OF THE DIVISION COMMANDER.** — a. From the point of view of the division commander, the primary consideration in the situation is the safety of the 1st Division. If the division fails in its attempt to hold the McLouth position until dark tomorrow it will be forced to withdraw in daylight, in the face of a superior force, and over open terrain containing little cover. Such a withdrawal is certain to be attended with heavy losses and may result in defeat. The safety of the 1st Division requires relief from hostile pressure before daylight tomorrow. Since no adequate support or reinforcement from the corps can be expected in time to be effective, the alternative is to withdraw from action after dark 7 June.

b. The wishes of the corps commander are expressed in the present mission of the 1st Division. From the corps viewpoint it is desirable that the enemy be held south of the 1st Division's present position. If, however, the division cannot hold, it will be better for the corps to have the division withdraw voluntarily under cover of darkness to a position of its own selection farther to the rear, than to have it forced off its present position and possibly fail to check the enemy within any reasonable distance.

c. From the division viewpoint the withdrawal, to be effective, must be for a sufficient distance to the rear to force the enemy to displace his artillery before renewing his attack, and should be to ground of sufficient defensive strength to enable the 1st Division to hold it until the arrival of the remainder of the corps. The corps commander is primarily interested in holding the hostile forces as far south as possible and in facilitating to the greatest degree the offensive operations of the I Corps. The position selected should, if possible, be one which will satisfy the requirements of both division and corps.

d. The main water shed in the 1st Division area runs from McLouth generally northwest through Nortonville. Streams flowing east and northeast into Big Stranger Creek and west and southwest into the Delaware River cut the adjacent terrain into ridges which can be combined into a number of possible positions for defense.

A position generally parallel to the present front of the 1st Division might be based in part on one of the following: the line: Highway 92 from crossroads 540-M east through Springdale; the general line: Winchester — Easton; the line: Highway No. 4 from road junction 327-M west to the Delaware River; the ridge south of Rock Creek from Dunavant west to the Delaware River. There are also others. Any position based on these ridges, however, would be weakened generally by lack of depth and by avenues of hostile approach frequently afforded by the network of streams. Any east-west position as far north as Winchester would have the additional disadvantage of giving up a great deal of ground which the I Corps would eventually have to recapture.

e. The northeast-southwest direction of Honey Creek, Fishpond Creek, and Crooked Creek breaks the ground west of the Winchester—McLouth highway into northeast-southwest ridges generally stronger and less broken by streams than those running east and west. One of the strongest is the ridge northwest of Honey Creek, running generally from the Delaware River well to the northeast of Winchester. It provides commanding observation, has excellent fields of fire, and Honey Creek constitutes a considerable obstacle over most of its front. From a defensive position on this ground the 1st Division, with its right resting on the high ground north of Little Slough Creek and its left covering Winchester, could offer strong resistance to the superior forces now confronting it. During the delaying action

the mass of the hostile attack, on both positions, has been directed against the Blue left and the right of the 1st Division has not been subjected to much pressure. A withdrawal to a position northwest of Honey Creek would move the unpressed Blue right only three miles, giving up the minimum of ground, while the hard pressed left flank would be withdrawn eight miles, relieving it completely from hostile pressure. Before Red can attack it again he must displace his artillery and move his troops forward. If he transfers his main effort to the Blue right flank he will be forced to a time-consuming regrouping of his forces. A position northwest of Honey Creek therefore satisfies all the requirements of the division commander.

f. From the corps commander's viewpoint a withdrawal to the Honey Creek position will place on the enemy's left flank a strong force which he cannot disregard. If Red follows up the withdrawal and attacks the east flank again, he must move some of his troops at least 8 or 10 miles in order to get into position and if Blue delays him, it is unlikely that Red will be able to attack before the afternoon of 8 June, too late to drive it home before dark. If Red attacks the Honey Creek position he must face to the northwest, thus exposing his right flank and presenting to the I Corps a favorable opportunity for decisive offensive action.

If Red attempts to contain the 1st Division with a part of his force, and to move to the north and delay the advance of the corps with the remainder, he will disperse his forces in the face of a superior enemy and present to the I Corps an opportunity to defeat him in detail. Since Red has no trucks for tactical purposes, the superior mobility of the entrucked 2d Division would make this operation especially dangerous for Red.

If Red maintains his present position and refuses to attack the Honey Creek position, the action of the 1st Division will have been successful in holding him on his present ground without a battle. The position northwest of Honey Creek thus satisfies all the requirements of the corps commander.

g. The corps commander sees the desirability of drawing the Red force to the northwest so as to expose its right flank; also the need for retarding its advance so that the corps may arrive in time to strike it in flank while closely engaged on the Honey Creek position, and before it has had time to defeat or drive out the 1st Division. He foresees that if contact is lost and the enemy learns of the approach of the remainder of the corps, Red may discontinue his advance and defend in his present vicinity, in which case the corps opportunity for offensive action would be less favorable. Therefore, in approving the recommendations of the division commander, he directs that the 1st Division maintain close contact with the enemy and delay his advance to the north.

12. PLAN OF WITHDRAWAL. — a. The withdrawal should begin a sufficient time after dark to permit preparatory movements to be made under cover of darkness. About half an hour is satisfactory. It should not begin so late as to delay the arrival of the troops on the new position until after daylight or reduce needlessly the time available for organization of the position.

b. As the division is now defending with brigades abreast the withdrawal will be simplified if it is made in that formation. There are no good reasons for changing it. The road net is ample and each brigade should be assigned a zone of withdrawal by extending the present boundary a sufficient distance to the rear.

c. The withdrawal should be protected by a covering shell composed of rifle and machine-gun detachments not to exceed the strength of one rifle company and one machine-gun platoon for each battalion occupying the main line of resistance, supported by one battery from each light and medium field artillery battalion. All elements of the covering shell should be left in position without change of disposition and should simulate normal activity as fully as their depleted strength will permit.

d. It is usual to withdraw the covering shell about two hours before daylight, the artillery preceding the infantry by about half an hour. In this situation a part of the covering shell must withdraw through the general covering force, in position in the left sector. To prevent any of the withdrawing groups being mistaken in the darkness for the enemy and fired upon, the withdrawal of the covering shell should be so timed that the infantry elements will not reach the position of the general covering force before daylight, yet will be able to withdraw beyond effective range of enemy small arms under cover of darkness. It is believed that about one hour will suffice for this and the infantry elements of the covering shell are directed to withdraw at 3:00 AM and the artillery elements half an hour earlier. Both elements should rejoin their organizations by the most direct routes, reverting to unit control upon arrival. The distance to the new position is short, the trucks available are insufficient for their transportation, and so the infantry elements must withdraw to the new position by marching.

e. The missions of the general covering force prescribed in the directive of the division commander were: to maintain close contact with the enemy, and delay his advance to the north. In view of the hostile strength the execution of these missions will require a force of considerable combat power. The infantry component should be no stronger than is necessary for effective delay and should not exceed a regiment. If too strong it may become so closely engaged as to be unable to extricate itself. The two infantry battalions now in division reserve are considered sufficient.

f. The bulk of the 901st Cavalry Squadron is now in contact with superior Red cavalry, which has driven it behind Fall Creek. The arrival of the 902d Cavalry Squadron in the vicinity of Springdale at 7:00 PM will bring Blue to equality in cavalry strength with Red. Because of the suitability of this arm for delaying action and in order to coordinate all the delaying operations under one commander, the two cavalry squadrons, less detachments, should be attached to the general covering force. As the 1st Cavalry Brigade will not arrive in Boling until dark 8 June, the general covering force should be charged with reporting any hostile movement east of Big Stranger Creek.

g. By means of field artillery the general covering force may be given combat power without increasing the risk of its becoming too closely engaged; in this situation it should be strong in artillery. The infantry elements should be supported by not less than a battalion of light artillery and it is considered desirable also to provide a battalion for the support of the two cavalry squadrons. Since the 1st Field Artillery is conveniently located to furnish these battalions it is attached to the general covering force. Though the medium howitzers can probably effect satisfactory support of the covering force from locations behind the new defensive position it is considered desirable to place at least one battalion under the control of the covering force commander. The 1st Battalion 3d Field Artillery is most conveniently located for this purpose.

h. While there have been no reports of its use as yet, the enemy is known to possess a small mechanized force. To afford the necessary protection, the general covering force should have attached to it at least one company of the division antimechanized battalion.

i. If it were desirable to delay the enemy forces to the maximum, it would be appropriate to charge the division engineers with the preparation and execution of suitable belts of demolitions over the entire area of withdrawal. In such a case one company of engineers would be sufficient for the local needs of the general covering force. But the corps commander wishes to delay the hostile advance only enough to insure the arrival of the I Corps while Red is closely engaged on the new position and before the 1st Division can be driven off or defeated; hence, demolitions are not desirable over the entire front. They should be used only to the extent necessary to prevent the overrunning of the covering force and should be executed under the control of the covering force commander. As this will increase the engineer needs of the general covering force, it should have not less than one battalion of engineers attached to it.

j. The strength of the general covering force and the missions with which it is charged indicate that it should be commanded by an officer of rank and experience, certainly not less than a regimental commander. However, during the time that the covering force is operating, the regiments will be busy in the organization of the new position and it is considered undesirable to deprive one of them of its commander during this period. The brigade commanders will complete their most important work with the issue, during the afternoon, of their orders for the withdrawal and occupation of the position and will probably be more available thereafter than any of the regimental commanders. As the 2d Brigade has been least pressed in action, has the shortest and simplest withdrawal, and will probably escape the brunt of the next attack, its commander is selected for the command of the general covering force.

k. Ordinarily in a night withdrawal all units move to the rear except the covering shell, which is left in position. The one way movement simplifies control and coordination. In this situation the necessity for moving some of the components of the general covering force to the front while the bulk of the division is moving to the rear presents a little more difficulty. The movement must be controlled sufficiently to prevent conflict between units and avoid confusion. A workable solution is to attach all the units of the general covering force, except the artillery, at 8:00 PM and move them into covering position by 9:30 PM. Practically all these movements will be in the sector of the 1st Brigade, in which there will be no artillery withdrawing to the new position, and they can be completed before the withdrawing infantry reaches the location of the general covering force. The daylight movement between 8:00 PM and dark will betray nothing to the enemy because night will fall before the movements are completed and forward movements are not indicative of an intention to withdraw.

The artillery of the covering force, all located in the sector of the 1st Brigade, can be attached at dark after the completion of its daylight fires, held in its positions until the forward movement of the other components of the covering force has been completed, and then moved ahead of the withdrawing infantry, to its previously selected positions for the support of the general covering force. Here, about daylight, it will be rejoined by the

batteries left in support of the covering shell. The remainder of the 1st Field Artillery Brigade should be restricted in its withdrawal to the sector of the 2d Brigade, in which it is now located and where there will be no complicating forward movements.

l. The initial position selected for the general covering force should be one suitable for the initiation of its delaying operations and from which it can make early contact with the mass of the enemy after the withdrawal of the covering shell, whose initial rearward movement it should protect. The line given is considered satisfactory. It does not extend across the entire front of the division. This shortens the front on which the general covering force will operate and concentrates its strength in front of the enemy's mass. It permits the hostile force to make contact with the right of the new position. If the enemy follows up the covering force as it moves to the north, he may be brought progressively into contact with the position. A branch of Honey Creek, not shown on the road map, flowing northwest from the vicinity of McLouth, and the proximity of the new position will, to some extent, protect from local envelopment the right flank of the covering force.

m. The half troop of cavalry on the right of the final delaying position should be retained. As it is too far from the general covering force for convenient control by its squadron commander, it should be kept under division control and given the mission of covering the right of the division withdrawal and reporting any hostile movement west of Honey Creek.

n. The infantry brigades should withdraw about a half hour after dark. The extension to the rear of the boundary between brigades permits each brigade commander to conduct his own withdrawal within his zone of action. The road net is ample and the situation presents no difficulties. Each brigade should be charged with the protection of its flank of the division against mechanized attack.

o. Since the artillery in the sector of the 1st Brigade, less elements in the covering shell, is attached to the general covering force at dark, the only artillery to be withdrawn to the new position initially are those units in the sector of the 2d Brigade and the battalion of howitzers emplaced partly in both sectors. These should withdraw after dark and shortly before the infantry. To avoid conflict with the components of the general covering force moving forward into position, the artillery should be restricted to routes in the zone of action of the 2d Brigade and given a line to clear at such time as will insure the evacuation of its areas before the arrival of the withdrawing infantry.

p. Since the battalion of engineers with the covering force will execute all demolitions for the withdrawal, the principal duties of the 1st Engineers, less detachments, will be in connection with the organization and occupation of the new position. The regiment should withdraw shortly after dark and retire thereto by routes which will not interfere with other withdrawing troops.

q. The 1st Antimechanized Battalion, less detachments, should withdraw shortly after dark by a prescribed route to a central location in rear of the new position where, under division control, it can be prepared to meet a mechanized threat from either flank of the division.

r. The plan for the withdrawal should make full provision for the maintenance of secrecy.

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Qualities of the General

Wu the Master said:

"The leader of the army is one who is master of both arms and letters. He who is both brave and tender can be entrusted with troops.

"In the popular estimation of generals, courage alone is regarded; nevertheless, courage is but one of the qualifications of the leader. Courage is heedless in encounter; and rash encounter, which is ignorant of the consequences, cannot be called good.

"There are five matters which leaders must carefully consider.

"First, reason; second, preparation; third, determination; fourth, vigilance; fifth, simplicity.

"With reason, a multitude can be controlled like a small number.

"Preparedness sees an enemy outside the gate.

"Determination before the enemy has no thought of life.

"Even after a victory, vigilance behaves as before the first encounter.

"Simplicity ensures few regulations, and preserves order."

—The Sayings of Wutzu.

Book Reviews

BY MAJOR WILLIAM H. SPEIDEL, *Infantry*

THE ROOTS OF STRATEGY

BY MAJOR THOMAS R. PHILLIPS

448 pages . . . Harrisburg, Penna.: The Military Service Publishing Company

1. "All warfare is based on deception. . . . The skillful opponent should be judged, not by appearances, but by the more precise information obtained from spies."

2. "Those designs are best which the enemy are entirely ignorant of till the moment of execution."

3. "Drill is necessary to make the soldier steady and skillful, although it does not warrant exclusive attention. Among all the elements of war it even is the one that deserves the least, if one excepts those which are dangerous. . . . Few men occupy themselves with the higher problems of war. They pass their lives drilling troops and believe that this is the only branch of the military art."

4. "I approve of all methods of attacking provided they are directed at the point where the enemy's army is weakest and where the terrain favors them the least."

5. "The strength of an army, like the momentum in mechanics, is estimated by the weight multiplied by the velocity. A rapid march exerts a beneficial moral influence on the army and increases its means of victory."

These quotations have been selected from Major Phillips' collection of military classics. All are as applicable today as the day they were first written. In fact some of them have a rather pertinent tone, as though they were intended to fit an immediate situation. All, however, precede the death of Napoleon.

The first was written about 500 B.C. by Sun Tzu, author of *The Art of War*, the oldest military work in existence and unquestionably the greatest military classic in any language.

The second is quoted from the military compilations of Vegetius, recorded about 390 A.D. These compilations were circulated in manuscript for a thousand years, and served the purpose of field service and training regulations throughout Europe.

The third is taken from *My Reveries upon the Art of War*, written in 1732 by Marshal Maurice de Saxe. Despite the fact that Saxe lays no great emphasis on the importance of drill, he was responsible for the introduction of cadenced marching. This art had been lost to European armies for a thousand years, but was rediscovered by Saxe as a result of his diligent studies of Vegetius.

The fourth is contained in *The Instruction of Frederick the Great to his Generals*, written in 1747. It is considered that, next to Clausewitz, this military work formed the basis of the modern German military system.

The fifth is quoted from the *Military Maxims of Napoleon*. The application of this particular maxim is responsible for the recent German successes in Poland and Holland.

The Roots of Strategy is a collection of military classics—rare volumes—presented in a form which can be readily assimilated by the military student who is limited to English reading. The editor claims to have selected the best available sources and, with the exception of the oriental and Roman classics, to have subjected them to a scrupulous and diligent process of translation. The collection is an invaluable contribution to English military literature. It should have a profound effect in stimulating an interest in abstract military thought and in clarifying the fundamental truths of strategy.

THE ART OF MODERN WARFARE

BY HERMANN FOERTSCH, Colonel of the German General Staff

Translated from the German by Theodore W. Knauth

273 pages . . . New York: Veritas Press

In a most timely book, Colonel Hermann Foertsch sums up the strategical and tactical doctrines of the German Army as they were evolved from the experiences of the past and subjected to the refining processes of modern technical progress. It accentuates with vigorous strokes the need for individual initiative on the part of the common soldier, and more particularly of the subordinate leader.

For the reader there will be no toilsome and monotonous plodding through a mass of detail in search of the lessons that will be applicable today. The short history of warfare, including the lessons of the World War and the reasons for the defeat of the German Army and culminating in a pointed expository of modern warfare, its weapons, tactics and questions of strategy, forms an interesting study that will contribute much to the understanding of the political crises of the recent past.

Most impressive is the advice given to the officer who would have the will to succeed in his military capacities. Such a man must have an open mind "to everything that happens in the field of technological achievement." He must be "imbued with the sense of his own duties and responsibilities." His life must be "wholly lived in communion with his people—that is the kind of officer for whom the present and future are calling. Firmly rooted in his people, borne by the feeling of his solidarity with his men, standing firmly on his own feet in the brief moments of his independence of decision—that is how an officer should aim to realize his destiny as the supreme embodiment of a mind under control, and of an unshakable will to victory."

WHY EUROPE FIGHTS

BY WALTER MILLIS

277 pages . . . New York: William Morrow and Company

Starting at the peace table in Versailles during the summer of 1919, Walter Millis tells the graphic story of those crises which led up to the opening of the European War on September 3, 1939. Mussolini's rise to power seems to have furnished the pattern upon which Adolph Hitler fashioned the ambitious and ultimately successful program of the National Socialist Party. But it is not long before the Italian dictator is outstripped by the rapid strides of Hitler, who moves on through the pages of this book from one conquest to another. As the democracies relaxed in the hope that each crisis was the last, they apparently failed to realize in the dynamic program of Germany that tier upon tier was being added to a tower of strength. Finally there came an end to appeasement and the nations of Europe stood on the threshold of war.

The war came, so Mr. Millis says, not because of any one reason, "but because of everything which had gone before. It came because it turned out that—after all the fears and hatreds and violences of the years since 1918, after all the vacillations and uncertainties of the democratic powers and all the brutal but successful vigor of the dictators, after all the piling up of armaments, all the shrieking insults and half truths and fantastic theories of the propaganda machines, and all the familiarity with the idea of war which these things left behind them—after all this, there was simply no way in which the knobbly building blocks of the European nations could be put together into a stable and working system without a war. . . . It came because the democratic statesmen surrendered when they might have been firm and because they did not dare surrender when firmness could no longer prevent a war."

As this piece of dramatic history moves on from one critical event to another in rapid succession we can readily understand the reasons for the German military success and for the weaknesses of her opponents. Germany is constantly moving toward an objective. Her machinery is geared up with the driving force of initiative and directed by the hand that operates under the influence of the planned attack.

THE MARCH OF THE BARBARIANS

BY HAROLD LAMB

389 pages . . . New York: Doubleday, Doran & Company

Once again the author of *Genghis-Khan* and *Tamerlane* has delved deeply into the moldy chronicles of that shadowy and remote period, which was dominated by the conquests of the Mongolian Emperors from Genghis-Khan to Kubilai Khan and the Turkish Tamerlane, and brought forth a dramatic historical narrative of the rise and fall of that remarkable dynasty known as the "Golden Family." The story opens before the dawn of Eastern civilization, when primitive nomadic tribes "lived along the fringe of the great ice" and roamed the steppes of Asia. They became

inured to the hardships of the saddle, conquered the weaker tribes and, in the course of centuries, penetrated the barriers that hemmed them in.

Eventually there arose from among these scattered outlaw tribes a man who was able to consolidate the full force of their sporadic outbursts into a highly organized military unit; and that man was Genghis-Khan. According to Harold Lamb, his genius lay in his ability to exploit the combined power of his ruthless and reckless hordes, to operate according to skilfully devised plans, and never to display weakness by being betrayed into mercy. By the time of his death in 1227 his family had become the god-like Golden Family, and "he had conquered more of the earth's surface than any other man. From the Pacific to the Volga his word was law; his roads were being opened from the Persian desert to the edge of the Siberian *taiga* where the first horse nomads had existed."

Under his successor, Ogadai Khakan, the barbarians swept across Asia, through Russian Kiev, Poland and Hungary to the waters of the Danube. The fate of Europe was hanging in the balance when Ogadai died and the Mongol horde had to return for the traditional family council. Meanwhile the tents began to disappear from the desert to be replaced by palatial pavilions, and the culture of the conquered became assimilated by the conquerors.

The apex of culture and magnificence, however, was attained under Kubilai Khan, under whom the Moslem empire reached its culmination in a form of civilization that began to mark the disintegration of the dynasty. Following the spectacular triumphs of Tamerlane, the empire became involved in internecine feuds and finally gave way to the encroachments of superior civilizations.

Harold Lamb has told a story of dramatic epoch when the more civilized nations and peoples of Asia and Europe were forced to conduct their greatest fight against a foreign invader in order to preserve their own cherished civilizations. For the average reader it will appeal to the imagination. For the student, whose curiosity about sources must be satisfied, the author has provided an annotated bibliography.

FAILURE OF A MISSION

BY SIR NEVILLE HENDERSON

334 pages . . . New York: G. P. Putnam's Sons

Sir Neville Henderson, the last British Ambassador to Berlin, while telling the story with intimate details of the failure of responsible British statesmen to understand the portentous significance of the circumstances that furnished the background of the present war, lends full and loyal support to the policies of Neville Chamberlain. In assuming his responsibilities in Berlin he states that he felt humbly that he "had been specially selected by Providence with the definite mission of . . . helping to preserve the peace of the world." His book indicates that there can be no doubt but that he was sincere in his mission. Even as late as 1937 he believed, with Mr. Chamberlain, that an understanding between Germany and Britain was quite possible. With the mass of the British people he recognized that Germany had

real grievances arising from Versailles, and he was determined to utilize the great power of his statesmanship to satisfy them.

He believed that the aim of Hitler was the unification of the German people and, that once this was accomplished, he trusted that "Hitler and the reasons for his existence, and the methods of his regime, would disappear." With the seizure of Prague he became conscious of his error, but he still agrees with Mr. Chamberlain that his efforts to come to terms with Germany were unquestionably the right policy.

The reader will find in Sir Nevile Henderson a fair and understanding negotiator, interested in the cause of justice between nations, attempting to foster an attitude of honest friendship toward Germany, an attitude that he feels, due to the force of circumstances, unavoidably became converted into one of enmity. This attitude is rather pronounced when he leaves Berlin for the last time, realizing the termination of his mission and its complete failure.

A CONCISE HISTORY OF ITALY

BY LUIGI SALVATORELLI

688 pages . . . New York: Oxford University Press

Mr. Salvatorelli's history of Italy is a record, from pre-historic times to our own day, of the critical events which occurred among a people occupying the geographical area which we today recognize as the Italian State. It covers a broad field of cultural and political development that has rarely been expressed between the covers of a single volume. From out of a mass of Roman and Church history and the history of early western civilization there emerges, about the twelfth century A.D., an "Italian people" who, by reason of tradition, race and a more or less common language, are entering the historic phase of substantial unity that is to classify them as "Italians."

There is a profound scholarly touch to those portions of the *Concise History* that portray early medieval and Church history. The historical organization and the interpretation employed in the chapters of the Lombard kingdom, the conflict between the papacy and the empire, the Guelphs and the Ghibellines, Florence and the renaissance present an extraordinarily rare and illuminating picture of Italian history, that stands out in bold relief against the background of obscure documents. The Italian people rise from one altitude of civilization to another and, in their political evolution, they may well be considered as an experimental laboratory in which have been tested out all the political experiments known to the civilized world.

The final sixty-nine pages of the history are devoted to the formation of the unitary state and its culmination in the present day political expression, which Mussolini has defined as an "authoritarian democracy." In its present form, according to Mr. Salvatorelli, "it is a State in which the government is sovereign, and power diminishes progressively from the top to the bottom, but a State which intends to interpret the will of the people and satisfy its needs, receiving the approbation of the citizens by means of periodical votes."

For the research scholar there is a generous bibliography arranged according to chapters. The book contains a long index of names, a feature which marks it as a valuable reference book for any historical or biographical library.

TURKEY AT THE STRAITS

BY JAMES T. SHOTWELL AND FRANCIS DEAK

196 pages . . . New York: The Macmillan Company

In a clear and concise monograph the authors have presented a brief history of the Dardanelles and the Bosphorus in its commercial and strategic aspects from the time of the Trojan War to the signing of the treaty of mutual assistance between England, France and the Turkish Republic. The attitudes of the Axis Powers and Russia toward the Balkan States and the Near East is of vital importance to Turkey's control of the Straits. "The drive on Constantinople and the Straits is by no means over. Indeed, so long as international relations are based upon the politics of power, the question of the Straits will remain a recurring challenge to statesmanship."

After the founding of the Republic of Turkey in 1919-22, Turkey agreed to the neutralization of the Straits as an internationalist measure and continued to adhere to this policy as long as other states indicated any promise of co-operation under the League of Nations. In 1936, under the terms of the Montreux conference, Turkey undertook to rearm and control the Straits, recognizing administrative responsibility to the League. The authors attribute this step to Soviet domination. "Germany, at that time to all appearances the leading anti-communist power of Europe, professed to be primarily concerned about the advantageous position in which the Montreux Convention placed Soviet Russia. Collaterally, she was also disturbed by the possibility of increased Franco-British influence in Turkey and the resulting alignment of Turkey with the Western Allies which might hamper whatever ambitions she may have harbored in the Balkans and the Near East."

The authors predict that, "either during or after the war, we will see Great Britain, Russia and Turkey at the three corners of the triangle which so many times in history has constituted a graphic representation of the struggle to solve satisfactorily what has proved to be as impossible a task for European diplomacy as was the squaring of the circle for the mathematicians."

The latter portion of the book contains the four important treaties on the Straits since 1919. A critical study of these treaties, combined with an extended analysis of the material listed under the bibliography, will no doubt lead the student of European history to the ultimate conclusion that Turkey is indeed *on the spot*.

REVOLUTION—WHY? HOW? WHEN?

BY ROBERT HUNTER

385 pages . . . New York: Harper and Brothers

Revolution is an intimate study from a historical point of view of those forces which impel sociological and economic

unheavals and produce changes in the political and economic aspects of nations. It "is not the work of a casual student but the essence of over forty years of study and of several years of association with socialist and communist groups." Extensive travel and a close association with such revolutionary leaders as Bebel, Jaurès, Lenin, Mussolini, MacDonald, Hardie, Shaw and other prominent Socialists, labor leaders and revolutionists would seem to qualify the author to treat his subject with discriminating understanding. As the experiences of the past are presented the reader will become conscious of the effort of the author to influence the dissatisfied citizen to go easy in accepting the proposed remedies as cure-alls for the economic ills of this world. "No new cures have emerged in recent years and even these panaceas are new only in the form in which they appear."

Mr. Hunter recognizes four distinct groups of revolutionists. One consists of the Utopians, "the makers of programs and of creeds, enchanted with their visions of a perfect world planned by idealists." Another is made up of orators who thrill "not only the delegates but huge masses of the populace." The third group represents the trade-unions and cooperative societies. The fourth contains the conspirators, schooled "in the strategy and tactics of revolutionary movements" signing "their names to the programs of the Utopians but caring 'little about them.'"

The entire study is an unmasking of the schemes and technical devices employed by the revolutionists, devices which result in appalling disasters which overwhelm nations and render them as suitable victims for the exploitation of the revolutionists. It is a warning of the "dangerous roads where others have wrecked themselves and their nations. Their lessons will not be lost if they persuade us to move cautiously, stop, turn back or seek another road."

THE UNFINISHED WAR

BY ERIC MOORE RITCHIE

349 pages . . . London: Eyre & Spottiswoode

A considerable portion of this book is based on the author's own experiences in Africa. Its purpose is to tell the story of the Anglo-German conflict in Africa in relation to the future of the British Empire. It deals largely with the comparative merits of the British and German colonial developments in Africa before Germany lost her African colonies. Much credit is given to the German colonial administration for its achievements in bettering the conditions of the natives, as well as those of the white man. "Even the most impassioned anti-German shinning up a wrong tree on the question of the record of Germany in Africa has hesitated to doubt the industry and sense of order of the German

as a colonist. These qualities are as inherent in the race as its courage in battle. But it is when we come to achievements in the region of medical hygiene and research, especially in respect of tropical disease, that the greatest praise must be given to the German. . . . The fact is that, in proportion to her opportunities and ours in that respect, Germany shone."

For Mr. Ritchie, however, there are other considerations than the welfare of the natives. For him there is no middle course. Germany's exclusion from Africa must be permanent. England must retain the commanding control in order to guarantee its survival. Africa stands in the geographical center of the British Empire, a strategical position to be considered if the disruption of the empire is to be prevented. His answer to the argument that the return of the German colonies is necessary in order to provide essential living space is that, in the four former German colonies of South-West Africa, East Africa, the Cameroons and Togoland, the entire German population was less than one-twentieth of that of the city of Danzig.

There are stirring chapters of tales of battles of other days, of the great epoch of African exploration and of personal experiences gathered over a long period of service in Africa. But the outstanding purpose of the author is to define the true significance of Africa for Britain, as well as for Germany.

CANADA: AMERICA'S PROBLEM

BY JOHN MACCORMAC

287 pages . . . New York: The Viking Press

The problem with which this book is concerned is one which involves the relations between the United States and Canada, relations which assume the nature of a difficult international problem should the United States be forced to apply the principles of the Monroe Doctrine to its northern neighbor. According to Mr. MacCormac, "Canada makes isolation impossible for the United States. Canada makes neutrality a fiction. Any day while the present struggle lasts, the United States might be forced to choose between a war over Canada and abandonment of the Monroe Doctrine."

With four billion dollars invested in Canada, the United States has a business interest in that country greater than in any other. Other than those interests carried on by the business man, the rank and file of this nation appears to be more interested in the affairs of the Far East than those of the nations of Europe. Canada is largely taken for granted. It is Mr. MacCormac's purpose to inspire the people of the United States with a keener understanding of the importance of Canada as a problem which this nation must ultimately attempt to solve.

Directory of Periodicals

Included in this directory are only those periodicals from which articles have been selected. See also "List of Periodicals Indexed and Key to Abbreviations."

MILITARY AND NAVAL PERIODICALS

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Catalog of Selected Periodical Articles

This section catalogs the articles selected from Library periodicals for the current quarter. Periodicals in this catalog are arranged alphabetically.

ARMY ORDNANCE

May-June 1940

OUR REARMAMENT. THE STATUS OF THE MAIN OBJECTIVES OF THE ORDNANCE PROGRAM. Major General Wesson
WINGS FOR THE ARMY. (Pictorial)
MILITARY HIGH EXPLOSIVES. THE TYPES USED IN ARTILLERY AMMUNITION IN OUR SERVICE. Captain Dutton

July-August 1940

NATIONAL PROTECTION. THE PRESIDENT'S ARMAMENT PROGRAM.
MILITARY SMOKELESS POWDER. PROGRESS IN THE SEARCH FOR IMPROVED PROPELLANTS. Dr. C. G. Storm
DEFENSE AGAINST NIGHT BOMBING. THE PROBLEM OF STOPPING THE HIGH SPEED AIRPLANE. Major Thomas R. Phillips
MODERN TRENCH MORTARS. INFANTRY WEAPONS WITH HIGH TRAJECTORY FOR CLOSE SUPPORT. Captain Daniel J. Martin
GAS DEFENSE. (Pictorial)
THE GARAND RIFLE.

ARMY QUARTERLY (Great Britain)

July 1940

SURPRISE IN WAR
THE GERMAN OFFICIAL HISTORY, VOLUME XII
CLAUSEWITZ: A HUNDRED YEARS AFTER. Hoffman Nickerson
FRENCH TRANSPORTATION AND SUPPLY IN 1914-1918

CAVALRY JOURNAL

May-June 1940

THE SIXTH CAVALRY IN THE FOURTH CORPS MANEUVERS
CAVALRY AFFAIRS IN CONGRESS
EXPANSION OF THE 7TH CAVALRY BRIGADE
LESSONS OF A BLITZKRIEG. Major General Rowan-Robinson, British Army, Retired
MAGNIFICENT—BUT IT WASN'T WAR. Cary I. Crockett
DEFENSE AGAINST TANKS. Major Randolph
CAVALRY LEADERS. Colonel Steward, Indian Army
LESSONS FROM NORWAY
PROBLEMS OF INFANTRY ATTACK TACTICS. Colonel Altrichter, German Army

CAVALRY JOURNAL (Great Britain)

July 1940

GERMAN BATTLE DRESS TO-DAY. (Illustrated) Lieut. Colonel Baker
 GERMAN MECHANIZED FORMATIONS IN POLAND
 THE ROLE OF CAVALRY

CHEMICAL WARFARE BULLETIN

July 1940

NAVAL ENGAGEMENT OFF MONTEVIDEO. Captain Kitchen, CW-Res
 SERVICE SCHOOLS AND SERVICE DOCTRINES. Brigadier General Shedd
 CHEMICAL INDUSTRY IN MODERN WAR. Captain Kobe, CW-Res

COAST ARTILLERY JOURNAL

May-June 1940

LESSONS OF A BLITZKRIEG. Major General Rowan-Robinson
 THE USE OF MINES IN NAVAL WARS. Lieut. Colonel Benitez
 NEW ORLEANS. Lieut. Colonel Azoy
 RAPID DETERMINATION OF AA TACTICAL REQUIREMENTS. Major Sharpe
 WITHOUT LIGHTS. Captains Thompson and Wright
 STORY OF ARTILLERY THROUGH THE AGES. W. A. Windas
 HASTY CAMOUFLAGE FOR AA GUNS. Captain Rodyenko
 SIX KEYS TO GOOD MORALE. Major Fisher

July-August 1940

POWER PLUS SPEED. Captain Ehr Gott
 LIGHTNING WAR AGAINST THE ALLIES. Quentin Roosevelt
 WHO'S WHO? Major W. G. Johnson
 THE INVISIBLE WEAPON. Captain Grombach
 PICTURES: AIR INFANTRY TRAINING
 MIGHTY MAN OF KITTEERY. Major Elliott

FIELD ARTILLERY JOURNAL

May-June 1940

CAN WE ARM? Major General Snow, U. S. Army-Retired
 ORIGINS OF A MAJOR WAR. (I) Colonel Lanza
 INCIDENTS OF THE CAMPAIGN IN POLAND, 1939 Captain Kehm
 CLOSE-IN DEFENSE OF FIELD ARTILLERY. Captains Hart and Haines
 HINTS FOR MOTOR-CONVOY OPERATION. Captain Millice
 ARTILLERY EPISODES. Brigadier General Spaulding, U. S. Army-Retired
 GUNNER IN LUZON. Part IV. Brigadier General Scott, U. S. Army-Retired

July-August 1940

ARTILLERY AND THE TANK. AN ANALYSIS OF PORTIONS OF THE GERMAN
 ARTILLERY REGULATIONS
 CAN THEY LIVE WITHOUT YOU? Captain Duehring
 ORIGINS OF A MAJOR WAR. (II) Colonel Lanza
 GUNNER IN LUZON. Part V. Brigadier General Scott

INFANTRY JOURNAL

May-June 1940

LESSONS OF A BLITZKRIEG. Major General Rowan-Robinson, British
 Army, Retired
 PROBLEMS OF INFANTRY ATTACK TACTICS. Colonel Altrichter, German
 Army
 OIL IN TODAY'S WAR. B. Orchard Lisle
 EYES THAT SAW NOT. Branch Spalding
 ANTITANK DEFENSE. Major Mayberry
 SUPPORT AT MONTFAUCON. Colonel Lewis

July-August 1940

POWER PLUS SPEED. THE ESSENCE OF THE FLANDERS PENETRATION.
 Captain Ehr Gott
 TOWARD AN ELITE INFANTRY. Major T. R. Phillips
 AIR INFANTRY TRAINING. (Pictures)
 WHO'S WHO? Major W. G. Johnson
 MIGHTY MAN OF KITTEERY. A HEMISPHERE DEFENSE CAMPAIGN OF 200
 YEARS AGO. Major C. W. Elliott

JOURNAL OF THE AMERICAN MILITARY INSTITUTE

Spring 1940

THE INFLUENCE OF HISTORY UPON SEA POWER: A COMMENT ON AMERICAN
 NAVAL POLICY. A. Whitney Griswold
 THE ENGLISH SOLDIER IN THE CAMPAIGN OF AGINCOURT. Wilfred B. Kerr
 GRANT'S WOODEN MORTARS AND SOME INCIDENTS OF THE SIEGE OF
 VICKSBURG. F. Stansbury Haydon

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS

(Great Britain)

May 1940

SURGERY IN THE ARMY. Lieut. Colonel Monro, RAMC

JOURNAL OF THE ROYAL ARTILLERY (Great Britain)

April 1940

THE INFANT ARCHIE IN FRANCE (1914-1918). (19 ANTI-AIRCRAFT
 SECTION, R. F. A., DECEMBER 1915-JULY 1919.) Major Curtois

JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION

(Great Britain)

February 1940

FIRST TRENCH GASCogne PRIZE ESSAY (MILITARY), 1939. By Cadet-
 Captain E. G. Mandeville Roe, R. A. Subject: "The development of air
 forces has increased the burden imposed on Home Defence. Discuss its
 effect on the role and organization of the Regular and Territorial Forces in
 the event of a major European war."

ALSACE-LORRAINE IN 1914. A STUDY IN INDECISION AND GERMAN STAFF
 WORK. By Brigadier-General Sir J. E. Edmonds

THE NAVY AND THE CRIMEAN WAR. Lieutenant R. F. Colville, R. N.

RULES FOR MECHANIZED MOVEMENT. Major N. H. Edes

GERMANY'S FIRST IRONCLADS. Frank C. Bowen

THE GERMAN AIR FORCE IN THE POLISH CAMPAIGN

May 1940

THE UNITED STATES NAVY AND THE ALLIED BLOCKADE IN THE LAST
 WAR. C. V. Owen

THE FRENCH ARMY. Lieut. Colonel H. de Watteville

THE FRENCH NAVY. A French Contributor

THE AIR FORCES OF FRANCE. Major Oliver Stewart

THE SOVIET AIR FORCE AND THE WAR WITH FINLAND

JOURNAL OF THE UNITED SERVICE INSTITUTION OF INDIA

(Great Britain-India)

April 1940

MOBILE FORCES. By Zarif

KRASNAYA ZVYEZDA (Russia)

BY LIEUTENANT JOSEPH DASHER, O. R. C.

27 November 1939

MEDICAL TACTICS IN MODERN WAR.

[O Sanitarnoy Taktike v Sovremennoy Voynye.] Brigade Surgeon
 M. Akhutin

Events of recent years have afforded the opportunity of practical appli-
 cation of the existing plans for first aid to wounded, and of testing out the
 organizational principles and technical means of the individual stages of
 evacuation. Already in the organization of surgical work during the opera-
 tions of Lake Khasan (Changkufeng—translator) it became necessary to
 deviate from the established methods.

At Khasan it became clear that for the safe and speedy evacuation of
 the wounded from the field of action it is best to use special transports on
 caterpillar tracks. In subsequent engagements the transport which was fur-
 nished for this purpose by the high command—including tanks and armored
 cars—was of great help. The need for such armored motor transport was
 sharply felt during action in Western Ukraine and Byelo-Russia (against
 the Poles, September 1939—translator).

Conclusive evidence has thus been secured of the need of organizing
 special medical transport for the front.

Combat experience shows that the battalion medical officer should fol-
 low the battalion in battle; his main task is to organize the evacuation of
 the wounded to the rear. Medical work itself is performed "on the move,"
 under temporary cover, in vehicles of sanitary service, and, naturally, cannot
 be thorough.

Conditions require that the battalion medical officer must be not only
 an audacious commander, full of initiative and decision, but also a physician
 who quickly orients himself in surgical matters. It is up to him to bandage
 the wound properly, to place splints on fractures, to administer the first
 anti-shock treatment, etc. Experienced battalion medical officers even per-
 formed transfusion of blood from ampullae, sent from the division medical
 stations.

Regimental medical stations appeared in practice entirely different from
 their description in textbooks on medical tactics. In reality they consisted
 of but one tent where only the most urgent first aid was rendered, and where
 the wounded were initially registered and classified. Surgical work was very
 limited. According to textbooks regimental medical stations were to be
 established at a distance of 1½ to 2½ miles behind the line of action. In
 practice, however, various circumstances of combat forced the placing of
 such stations from 1 to 4, and even as far as 6 miles behind the line of action.

Basic duties, with which regimental medical stations were charged, were
 good bandaging, especially in case of fracture of extremities, and careful

registration of the wounded. Besides, the medical officers were supplied concentrated blood in ampullae, and in many cases emergency transfusions were successfully accomplished.

In further practice it was proved that the extent of work at regimental medical centers was the same as that at Khasan. All efforts to establish such stations at a distance of $1\frac{1}{2}$ to $2\frac{1}{2}$ miles behind the line of action were unsuccessful. With the aid of auto transport and a terrain which was passable for motor vehicles, it was possible to remove such stations 6 to 7 miles behind the line of action.

During the engagements which followed, the division medical stations were located $15\frac{1}{2}$ to $18\frac{1}{2}$ miles behind the front line, but in spite of this distance the great majority of the wounded arrived in much shorter time than at Khasan. The increased distance gave such advantages as being out of reach of enemy long-range artillery, and a relative stability which, of course, increased the surgical possibilities. As a result, a number of wounded were operated on, and even the most complicated operations were performed, excepting those on the skull. These latter operations were most conveniently handled in field hospitals.

At Khasan, due to short distances of evacuation, division hospitals were supervised almost entirely from the beginning of the engagement, by the chief of corps medical service. It is now entirely clear that this is a normal situation. The attention of the division medical officer is so absorbed by regiments, that not infrequently he finds it difficult even to supervise a medical battalion, to say nothing of supervising division hospitals.

The transfer of division hospitals to the care of the chief of corps medical service is very convenient, because the entire hospital structure of the corps is thus concentrated under single supervision. As a result, greater maneuverability with beds and personnel was attained.

Experience has now shown that the division hospitals, where operations must be performed under any conditions, were badly understaffed, considering conditions of modern warfare. Surgical personnel should have been several times larger.

It was necessary to remove division hospitals as far back as 50 miles, but in spite of this, no less than 30% of the wounded were operated on in time. Altogether, the division medical establishments operated on more than 70% of the wounded, i. e., almost 100% of those needing surgery.

All of the surgical stations had electricity. In field hospitals field X-Ray equipment was constantly used, and two X-Ray pictures in every case of a cranial operation were mandatorily required. X-Ray equipment was also extremely helpful in abdomen and chest wounds. Somewhat deficient was the quality of surgical instruments, especially for operations on the cranium.

The following conclusions are reached from experiences of recent years: While leaving intact the basic principles of medical service in the field, certain important changes must take place in its equipment and personnel, based on bringing timely surgical aid to the wounded as quickly as possible. Thus, the time factor becomes dominant.

With the vast increases of duties in modern combat, each medical commander should have a surgical consultant to aid him in both the medical and organizational aspects of surgical work.

28 February 1940

THE ORGANIZATION OF LIAISON IN WINTER CONDITIONS.

[Organizatsiya svyazi v zimnikh uslovyakh.] Captain Manzon

A shroud of snow reduces the maneuverability of certain liaison agencies. For instance, the employment of such means of locomotion as bicycle and motorcycle becomes difficult. The laying of wire circuits will not be easy.

In order to improve its maneuverability, telephone equipment on two-wheel carts will have to be placed on sled runners, or transferred to sleds. Ski mountings will be used in laying cable lines. Circuits will be laid off the roads, and when in forests far away from lanes or outskirts. In winter troops are more or less "tied" to the roads, and circuits laid in the immediate vicinity of the latter may be damaged. Telephone lines require extra care in winter, in order to prevent possible breakdowns due to snow drifts or sleet.

When using rockets for liaison it is necessary to use types which will be most noticeable against a background of snow. This applies also to the filters of flash signal equipment. Messengers should be put on skis. In the absence of roads a messenger on skis will replace the mounted messenger. Aircraft will be used for liaison because of ease in landing on snow.

21 May 1940

AERIAL LANDING PARTIES.

[Vozdushniye desanty.] Colonel Lozovoy-Shevchenko

After reviewing the events connected with the mass landings of parachute troops effected by the Germans in Holland and Belgium, the author ascribes the success of these operations to the following factors:

(1) Command of the air as enjoyed by the German air force, whose action succeeded in suppressing a large part of the Anglo-French air forces, assured the successful launching of parachute attacks and the landing of troops, as well as their further support and supply through the air.

(2) The launching of large numbers of parachute groups of varying strength along a wide front, caused the scattering of the Dutch army, which was forced to defend itself both from the front and the rear.

(3) The landing of parties in the deep rear, outside of the zone occupied by armed forces, gave the parachutists an opportunity of assembling, adjusting themselves to the terrain, and of utilizing the latter for their activities. In Holland such landing parties performed the greatly important mission of preventing the flooding of the terrain.

(4) The time of landing parties in echelon manner helped to dissipate the attention and the strength of the enemy, enabling the continual reinforcement of such parties.

(5) The large number of small parachute groups, and their launching at night, rendered difficult any action against them, facilitating the disorganization of the rear, and the destruction of communications.

(6) Insufficient defense of the Dutch airdromes, and the absence of mobile reserves, allowed parachuters to capture airdromes with ease, and to prepare for the landing of troop-bearing air transports.

(7) The rapid rate of advance of the German land forces, and particularly of mechanized units, assured prompt support of aerial landing parties. Especially well planned was the coordination between the aerial landing parties and the advancing land forces in the Rotterdam region.

29 May 1940

THE PLANNING AND ORGANIZATION OF RECONNAISSANCE.

[Planirovaniye i organizatsiya razvyedki.] Captain Volfman

During action against the Mannerheim Line each headquarters had three OP's, not including regimental and battalion OP's, which were connected by direct circuit with the division commander's CP, avoiding the communications center. This enabled the securing of timely information on the situation of own units, enemy action, and the nature of the terrain ahead.

The OP's were occupied by officers and noncommissioned officers from the reconnaissance battalion. The assistant to the chief of reconnaissance section was located at one of the OP's.

The author is of the opinion that each observation battalion should include a section of specialized observers who must be carefully trained for work at division OP's.

When making plans for reconnaissance no possible source of information should be overlooked. All forms of reconnaissance within the sector of the division should be coordinated for better results. Such questions as mutual exchange of intelligence both downward and upward, with the neighboring units, and within the division headquarters, must not be neglected.

The commander of the reconnaissance section must always have full knowledge as to the new location and nature of each reconnaissance and of the agency accomplishing it, as well as to the nature of reserves of the division headquarters and of each regiment. During the course of combat an emergency may arise requiring the immediate sending out of reconnaissance parties in one of the directions. If the commander of the reconnaissance section is always fully informed, this will cause no difficulty.

After the break through the Mannerheim Line it became necessary to organize auxiliary reconnaissance on the right flank for the protection of the breakthrough. The regiment which was advancing on the right flank was unable to perform this with its own resources. Thanks to exact calculations, a reconnaissance element of another regiment was employed for this purpose and this timely action assured the success of the division.

It is always important to have a reconnaissance reserve in the vicinity of the division CP, which would be there for the purpose of executing special, unforeseen missions. In the author's division this reconnaissance reserve consisted of a platoon of cavalry and a platoon of armored motor vehicles.

The composition of this particular element, however, should not follow a pattern, but should change in strength and weapons to conform to the individual situation.

MARINE CORPS GAZETTE

June 1940

ENGINEER PROBLEMS OF MARINE BRIGADES. Captain F. M. McAlister
PARACHUTE TROOPS. Captain John A. White

MILITARWISSENSCHAFTLICHE MITTEILUNGEN (Austria)

BY MAJOR WM. H. SPEIDEL, Infantry

January 1940

GREATER GERMANY'S FIGHT FOR LIBERTY.

[Der grossdeutsche Freiheitskampf.] Major General Paschek

General Paschek reviews the military and political situation for the year 1939. Two maps are included, showing the situation reached in the Russo-Finnish War at the end of December, and the grouping of the European Powers at the close of the year 1939.

ENGLAND. POLICY—ECONOMICS—STRATEGY.

[England. Politik — Wirtschaft — Strategie.] (I) Dr. Handel-Mazzetti

This article includes two maps: (1) America in the 300-mile zone; (2) Russia and the Baltic Sea.

The author traces the development of England as an Atlantic sea power during the reign of Elizabeth, from Cromwell to the Congress of Vienna in 1815, to Faschoda in 1898, and concludes with an article on Russia in the Baltic Sea.

THE CONFLICT IN EASTERN ASIA.

[Der Konflikt in Ostasien.] Major General von Lerch

The war in Eastern Asia is covered between 15 September to 15 December 1939. The main portions deal with the battle in Kiangsi-Hunan, the Japanese offensive in Kwantung and Kwangsi in South China and the battles behind the front.

VICTORY THROUGH ANNIHILATION.

[Der Vernichtungssieg.] Director of Archives Kiszling

The author reviews the book, "Der Vernichtungssieg" (in C & GSS Library), written by Lieutenant General Waldemar Erfurth. This book is a study of the coordinated operations conducted by the separated parts of a nation's army.

General Erfurth stresses the advantages of modern operations on exterior lines, secured by modern means of communication and rapid transportation on the ground as well as in the air. These means greatly reduce the dangers confronting separated parts of an army operating on exterior lines and make it possible for wars to be conducted with lightning speed.

The reviewer comments that General Erfurth's book was completed before 1 September 1939, and that the principles as presented by the author were applied in Poland.

February 1940

THE WINTER PAUSE.

[Die Winterpause. Wehrpolitische Übersicht 1. bis 29. Jänner 1940.] Major General Paschek

The author reflects on the military and political situation in Europe between 1 and 29 January 1940. In general the situation is quiet.

ENGLAND. POLICY—ECONOMICS—STRATEGY.

[England. Politik — Wirtschaft — Strategie.] (II) Dr. Handel-Mazzetti

This concluding installment covers the development of England during the two decades following the World War of 1914-1918. The author says that the airplane, added to the effect of the submarine, has greatly impaired British commerce and overcome the effects of her isolation. From a strategic standpoint England has ceased to be an island. The article includes a strategic map of England.

THE FURTHER DEVELOPMENT OF AUSTRO-HUNGARIAN ARTILLERY MATERIEL BY MEANS OF THE SKODA WORKS.

[Die Weiterentwicklung des öst.-ung. Artilleriegerätes durch die Skodawerke.] Major General Rieder

This article deals with the development of artillery pieces, produced for the Austro-Hungarian Army during the World War, 1914-1918, by Czechoslovakia during the years following the war. Six illustrations are used to exhibit the weapons discussed, namely: the 75-mm mountain gun C. D., the 76.5-mm light gun M30, the 100-mm howitzer M14/19, the 105-mm heavy gun, the 150-mm heavy howitzer M25, and the 83.5-mm mobile antiaircraft gun.

WAR AND TECHNIQUE.

[Krieg und Kunst.] Colonel Hesshaimer

The writer presents a study of the relation of war to culture and its consequential effect on the development of the arts and crafts.

THE TWELFTH VOLUME OF THE GERMAN HISTORICAL ACCOUNT OF THE WORLD WAR.

[Der zwölfte Band des deutschen Weltkriegswerkes.] Major General Steinitz

This review covers Volume XII of "The World War, 1914-1918," which deals with the military operations on land during the period from February to June 1917.

MILITAR-WOCHENBLATT (Germany)

BY MAJOR WM. H. SPEIDEL, Infantry

27 October 1939

GERMANY'S DEFENSIVE WAR OF 1939. THE FIGHT AGAINST FRANCE FROM 1 TO 21 OCTOBER.

[Deutschlands Abwehrkrieg von 1939. 8. Der Kampf gegen Frankreich vom 1. bis 21 Oktober.]

The activity was confined largely to small fights between patrols and units never larger than a company operating on German soil in the vicinity of Saarlautern. From Karlsruhe to Basel all activity was reported as being generally quiet. Sixty hostile planes, including 12 British, were reported to have been shot down.

9. The fight against England from 15 to 21 October.—This was confined mainly to aerial and submarine operations, the British bombing the German ports, while the Germans extended their operations to the North Sea and along the eastern coast of England.

REMINISCENCES OF A FLIER, 1918 AND SEPTEMBER 1939. PARALLELS BETWEEN YESTERDAY AND TODAY.

[Gedanken eines Fliegers. 1918 und September 1939. Parallelen zwischen gestern und heute.]

Despite the Polish War the lessons learned in the World War regarding aviation are still applicable to the employment of aircraft. Up to the present day, it may be said with little reservation, there have been no marked changes in aviation.

The following missions assigned to aviation by GHQ have their parallels with those of the World War:

- (1) Overpowering of hostile aviation.
- (2) Strategic and tactical reconnaissance.
- (3) Employment of aviation in, and on the boundaries of, the battle position.
- (4) Attack by combat aviation units against the principal supply lines or railway centers.
- (5) Employment for purposes of command, communication and transport.

THE CONDUCT OF SEA WARFARE IN THE BALTIC.

[Seekriegführung in der Ostsee.]

Comments on the article by Vice Admiral Osborne (Great Britain) appearing in the "Royal United Service Institution," August 1939.

The commentator believes this article has great instructional value in view of the British reverses resulting from the German-Russian alliance.

THE BATTLE FOR RAW MATERIALS.

[Kampf um Rohstoffe.] Lieut. Colonel Hedler

War can transform a nation, which is a possessor of raw materials, into a "has not" power. With the exception of oil, mercury, copper, antimony, calcium salts and sulphur, the British Empire has practically an inexhaustible supply of raw materials. On the other hand, however, England itself can produce only coal, coke and common salt; all other raw materials must be transported by water. But, inasmuch as England believes that she rules the seas, she hopes to establish control over every economic agency that will secure for her conduct of an English war an adequate supply of raw materials.

Life is a battle. That which Nature will not give willingly, must be taken from her by force. That is what Germany is doing, and in doing so she guarantees that even during the most critical times she will find substitutes for her lack of raw materials.

THE MEDICAL SERVICE IN THE SPANISH WAR.

[Der Sanitätsdienst im Spanischen Kriege.]

In the Red Army; in the Nationalist Army.

3 November 1939

GERMANY'S DEFENSIVE WAR OF 1939. THE FUHRER'S THANKS TO HIS SOLDIERS FOLLOWING THE TERMINATION OF THE POLISH CAMPAIGN.

[Deutschlands Abwehrkrieg von 1939. 10. Des Führers Dank an seine Soldaten nach Abschluss des polnischen Feldzuges.]

In which is awarded the Iron Cross of the Chevalier Class to Field Marshal Göring, Grand Admiral Raeder and Colonel General von Brauchitsch. This award was also conferred on 4 colonel generals, 11 generals, 2 admirals, 3 lieutenant generals, 1 colonel, 1 first lieutenant and 1 second lieutenant.

11. The Fight against the Western Powers from 22 to 29 October.—During this period small French forces were forced back across the border.

A SOLDIER'S THOUGHTS ON THE POLITICAL EVENTS AND PERSONALITIES OF THE WAR.

[Soldatische Gedanken zu politischen Ereignissen und Gestalten des Krieges.] Lieut. Colonel Braun

I. The English policy—a shopkeeper's guarantee. Why did England desert the Polish Army?

1. The modern bombers and pursuit planes.—They are very complicated machines and can only be serviced properly at their home ports or peacetime bases. Poland had no facilities for servicing them.

2. In Poland there were no underground hangars. There were no facilities for screening or camouflaging airplanes or placing them under bomb-proof shelters when not in use.

II. Men and midgets.—Wherein the author pays a tribute to Colonel General von Fritsch and other heroic Germans, reserving for the second classification Rydz-Smigly and others.

THOUGHTS ON THE SELECTION AND DEFENSE OF A MAIN LINE OF RESISTANCE.

[Gedanken über Verlauf und Verteidigung einer H. K. L.] (I) Captain Meltzer

An editorial note explains that this article was written before the opening of the present war in Europe, and states that, in view of the present military policy, the defensive has assumed a role of increased significance.

The following points are some of the more important ones stressed by the author:

Firing positions selected well to the rear have the great advantage of denying the enemy a knowledge of the fighting strength of the defender prior to the opening of the attack.

A fewer number of weapons are required to cover an area with fire, if they are placed so as to provide for flanking fire. Fire delivered from the flanks can also be laid down closer to the front of the main line of resistance than that which is delivered frontally.

The number of antitank guns available for use in a division zone of resistance will be adequate only when the main line of resistance is selected so as to require the hostile tanks to advance across unfavorable terrain.

Engineers are often assigned a multiple of odd or unrelated jobs to the extent that their efforts accomplish no progressive results in any single place.

ADMINISTRATION IN A BATTERY DURING POSITION WARFARE.

[Der innere Dienst bei einer Batterie im Stellungskriege.] Lieut. General Marx

The battery commander is faced with the difficult problem of supervising an organization that consists of three parts: the firing position, the observation post and the parking area for the limbers. During the World War we made the mistake at the outset of trench warfare of remaining too long at the observation post. The author recalls that, during the operation in the Champagne in October 1914, he had never visited the parking area, and only once did he have the opportunity to visit the firing position—and then it happened to be after dark.

In the command of a ship, the captain must occasionally turn the bridge over to a subordinate so that he can get about the ship and see what is going on. The same principle should apply to the battery.

10 November 1939

GERMANY'S DEFENSIVE WAR OF 1939.

[Deutschlands Abwehrkrieg von 1939.]

12. The official designations to be applied to the battles and operations of the Polish Campaign.

13. The war against the Western Powers from 29 October to 4 November.

COMPARATIVE STUDIES IN MILITARY HISTORY.

[Kriegsgeschichtliche Vergleiche.] General Wetzell

The decisive element in all wars is the will to annihilate the hostile force.

THOUGHTS ON THE LOCATION AND DEFENSE OF A MAIN LINE OF RESISTANCE.

[Gedanken über Verlauf und Verteidigung einer H. K. L.] (II) Captain Meltzer

The main line of resistance should be located so far in front of the most important observation posts of the artillery and the infantry heavy weapons, that an effective, observed, defensive fire can be laid deep within the hostile avenues of approach and the area over which the enemy is to attack.

RUSSIA AS A SOURCE FOR SUPPLEMENTING THE RAW MINERALS REQUIRED BY GERMANY IN WAR.

[Die Ergänzung des kriegswichtigen bergbaulichen Rohstoffbesitzes Deutschlands durch den russischen.] Dr. Ruprecht

THE NEW ORGANIZATION OF THE AMERICAN INFANTRY.

[Neugliederung der amerikanischen Infanterie.]

Extracts from the "Infantry Journal," March-April 1939.

24 November 1939

GERMANY'S DEFENSIVE WAR OF 1939.

[Deutschlands Abwehrkrieg von 1939.]

15. The war in the west from 12 to 18 November.

"POLAND'S CONTRIBUTION TO ULTIMATE VICTORY."

[Polens Beitrag zum Engsig.]

The author comments on the English attitude in considering that the Polish War gave England and France an opportunity to study the weaknesses of the German Army.

VICTORY THROUGH ANNIHILATION.

[Der Vernichtungssieg.] General Wetzell

The above title refers to a book written by Lieutenant General Walde-mar Erfurth. This book is a study of the concerted operations by the separated parts of an army. The author considers it a very noteworthy contribution to the art of the conduct of war. Its principal feature is to stress the principle that the ultimate objective of the art of war is the complete annihilation of the enemy in a major engagement.

FOREIGN VIEWS ON THE PRESENT WAR.

[Gedanken des Auslandes über den gegenwärtigen Krieg.]

The publication opens this series of articles by presenting the Swiss views. A Swiss writer considers it an especially remarkable achievement that mobilization and the concentration of forces were able to proceed without interruption by large aerial attacks, a fact which occurred despite the forecasts which appeared in the literature of all military powers.

1 December 1939

GERMANY'S DEFENSIVE WAR OF 1939.

[Deutschlands Abwehrkrieg von 1939.]

16. Battle designations of the Southern Army in the Polish Campaign. The engagements and the situation in the west from 19 to 25 November.

FIELD MARSHAL GENERAL VON MACKENSEN.

[Generalfeldmarschall v. Mackensen.]

This article is devoted to the commemoration of the 90th birthday of the venerable Hussar, 6 December 1939.

THE PROBLEMS AND WORK OF THE GERMAN ENGINEERS IN THE GERMAN-POLISH CAMPAIGN, 1939

[Aufgaben und Leistungen der deutschen Pioniere im deutsch-polnischen Feldzug 1939.] Major General Klingbeil

Without the decisive engagement of the engineers the rapid execution of the German operations in Poland would have been impossible. Everywhere movement was hampered by the San, Warthe, Vistula, Narew and Bug Rivers and their tributaries. In their retreat the Poles destroyed all the bridges over the rivers (fourteen over the Vistula alone) and practically all those over the small streams.

Crossings for the light motorized troops were constructed by the divisional and corps engineers. The heavy bridges were built by special bridging units under the supervision of fortress engineer staffs. The speed with which bridges were completed enabled sections of river lines held by the Poles to be turned.

The engineers fought side by side with the infantry. In the final assault on Westerplatte, the stubborn resistance of the defenders finally gave way to the attack of an engineer storm company.

MARCHES BY MOTORIZED RIFLE UNITS.

[Marsch motorisierter Schützeneinheiten.]

CONCRETE SHELTERS FOR MACHINE GUNS AND ANTITANK GUNS.

[Betonierte Unterstände für Maschinengewehre und Panzerabwehrkanonen.] Colonel Blümner

The author discusses the construction of concrete shelters for machine guns and antitank guns as described by the French General Chauvineau in "Une invasion est-elle encore possible?", a book published in Paris in 1939.

8 December 1939

GERMANY'S DEFENSIVE WAR OF 1939.

[Deutschlands Abwehrkrieg von 1939.]

18. The war in the west from 26 November to 2 December 1939.

FROM FOX HOLE TO CONCRETE BLOCKHOUSE.

[Vom Schützenloch zum Betonbunker.] Major Blum-Delorme

This article is written in commemoration of the beginning of trench warfare 25 years ago.

SOME ARTILLERY EXPERIENCES OF THE WORLD WAR.

[Einige artilleristische Weltkriegserfahrungen.] Lieut. General Marx

An account of the Battle of Fillières, 22 August 1914.

MARCH ORDERS FOR MOTORIZED TROOPS FIGHTING UNDER SPECIAL SITUATIONS.

[Marschordnung motorisierter Schützen im Gefecht unter besonderen Verhältnissen.]

15 December 1939

GERMANY'S DEFENSIVE WAR OF 1939.

[Deutschlands Abwehrkrieg von 1939.]

19. The war in the west from 3 to 10 December 1939.

A MOTORIZED RECONNAISSANCE DETACHMENT IN THE POLISH CAMPAIGN.

[Eine motorisierte Aufklärungsabteilung im Polenfeldzug.] (I) Wim Brandt

See Digest, page 66, Military Review, June 1940.

ONCE MORE: THE INFANTRY RIFLE AS AN OFFENSIVE WEAPON.

[Nochmals: Das Scharfschützengewehr als Offensivwaffe.]

FRONTIER FORTIFICATIONS AND DOUHETISM.

[Grenzbefestigungen und Douhetismus.] Captain Ruprecht

This article was written before the outbreak of the present war. The author points out that the Maginot Line and the frontier fortifications of other nations leave but two solutions to the effective termination of present-day conflicts—aerial warfare and economic starvation.

22 December 1939

GERMANY'S DEFENSIVE WAR OF 1939.

[Deutschlands Abwehrkrieg von 1939.]

20. The war in the west and in the Atlantic from 10 to 17 December 1939.

A MOTORIZED RECONNAISSANCE DETACHMENT IN THE POLISH CAMPAIGN.

[Eine motorisierte Aufklärungs-Abteilung im Polenfeldzug.] (II)
Wim Brandt

See Digest, page 66, Military Review, June 1940.

SOME VIEWS ON THE ROLLING BARRAGE.

[Einige Betrachtungen zur "Feuerwalze."] Lieut. General Marx

The author discusses the use of the rolling barrage in the attack on Chemin-des-Dames, 27 May 1918.

FUEL THE DECISIVE WAR MATERIAL.

[Der kriegsentscheidende Treibstoff.] Dr. Leonhardt

Despite all limitations and difficulties it must be recognized that fuel will play a decisive role among the materials used in the wars of the future. Consequently, in his "Total War," Ludendorff laid down the precept: "The accumulation of fuel materials is a necessity that must be provided for by all states preparing for war."

1 January 1940

GERMANY'S DEFENSIVE WAR OF 1939.

[Deutschlands Abwehrkrieg von 1939.]

21. The conduct of the war in the air, on the sea and the western front between 18 and 26 December.

COMMENTS ON VOLUME XII OF THE OFFICIAL GERMAN RECORD OF THE WORLD WAR.

[Betrachtungen zum XII. Band des amtlichen deutschen Weltkriegswerkes.] (I) General Wetzell

Volume XII is an ingenious portrayal of the unprecedented accomplishments of the German Army, its GHQ and the higher commands, and especially of the exemplary conduct of the German officers and soldiers of all grades. In addition to presenting a clear and authentic picture of the above, it is augmented by a fine and complete collection of maps.

AERIAL TROOP TRANSPORT.

[Lufttransporte von Truppen.] Lieutenant Himpe

The author herein presents the Italian view of this problem.

THE CONFLICT IN THE FAR EAST.

[Vom Konflikt im Fernen Osten.] Colonel v.Xylander

The writer presents the general situation as it existed in the late fall of 1939.

5 January 1940

GREATER GERMANY'S WAR OF LIBERATION, 1940.

[Grossdeutschlands Freiheitskrieg 1940.]

22. The conduct of the war on the western front and against England between 26 and 31 December 1939.

COMMENTS ON VOLUME XII OF THE OFFICIAL GERMAN RECORD OF THE WORLD WAR.

[Betrachtungen zum XII. Band des amtlichen deutschen Weltkriegswerkes.] (II) General Wetzell

The author herein concludes his review of what he considers a most excellent record of the accomplishments of the German Army in the World War.

WORLDWIDE THOUGHTS ON MOTORIZATION.

["Motorisierte" Gedankensplitter aus aller Welt.] Lieut. Colonel Braun

Colonel Braun discusses: (1) The new American type of a highly mobile and partially motorized infantry division; (2) An American's opinion of the effect of mechanization on the rapidity of war; (3) The new Addis Ababa-Assab highway.

A MOTORIZED RECONNAISSANCE DETACHMENT IN THE POLISH CAMPAIGN.

[Eine motorisierte Aufklärungsabteilung im Polenfeldzug.] (III)
Wim Brandt

See Digest, Military Review, page 66, June 1940.

12 January 1940

GREATER GERMANY'S WAR OF LIBERATION, 1940.

[Grossdeutschlands Freiheitskrieg 1940.]

23. The conduct of the war in the west and the war measures taken by England between 1 and 7 January 1940.

INTELLIGENCE, CHARACTER AND THE SELECTION OF LEADERS.

[Verstand, Charakter und Führerauslese.]

The author considers that it is about time to end the comparison between the relative merits of human material and morale. The two go hand in hand;

it is this combination which will result in producing the true characters of leadership.

ONCE MORE: "INDEFINITE ORDERS."

[Und nochmals "Unklare Befehle."] Lieut. General Marx

(1) "An hour's rest." During a corps maneuver in 1913 we received orders that the columns would rest for forty-five minutes. Fine. We fell out to drink and eat and to adjust our equipment. Scarcely had anyone time to take a drink when the order came to fall in. Why? The advance guard was able to comply with this order, but by the time it had reached us—nine miles down the column—the time had been consumed.

(2) "Direct fire." What is meant by applying direct fire to a target? All shots go directly forward; they can't go round a corner. Such an order may be confused with firing directly to the front. What we mean is "the target is exposed."

(3) "To defeat in battle," etc. To annihilate, defeat, neutralize or engage the hostile artillery. The amount of ammunition required to accomplish either of these may be different. Every battery engaged should conduct its fire as effectively as possible. The ultimate objective is the annihilation of the hostile resistance.

(4) Indefinite limiting points.

LANDING TROOPS BY AIR.

[Luftlandetruppen.]

THE CONFLICT IN THE FAR EAST.

[Vom Konflikt im Fernen Osten.] Colonel v.Xylander

Japanese operations in South China.

19 January 1940

GREATER GERMANY'S WAR OF LIBERATION, 1940.

[Grossdeutschlands Freiheitskrieg 1940.]

24. The conduct of the war on the western front and against England between 8 and 14 January 1940.

SCENES FROM THE SIEGE OF MODLIN.

[Bilder aus der Belagerung von Modlin.] Wim Brandt

Wim Brandt has written what well might be considered a concluding article to his graphic account "A Motorized Reconnaissance Detachment in the Polish Campaign," a digest of which appeared on page 66 of the Military Review for June 1940.

The scenes of action are principally concerned with the Polish defense of the three old forts north and west of Modlin and the part which the National Socialist Storm Troops played in forcing their surrender, and the capitulation of Modlin on 28 September 1939.

EXPERIENCES WITH MOTORCYCLE COMPANIES IN THE WORLD WAR.

[Weltkriegserfahrungen mit Radfahrerkompanien.] Major v.Köller

CANADIAN VIEWS ON THE ATTACK.

[Kanadische Ansichten über den Angriff.] Colonel v.Xylander

This article is a digest of one on the British conduct of the attack, written by Captain Simmonds in the Canadian Defence Quarterly for July 1939.

THE INDUSTRIAL PERFORMANCES AND CAPABILITIES OF THE AMERICAN AIRCRAFT INDUSTRY.

[Leistungen und Leistungsfähigkeit der amerikanischen Flugzeugindustrie.] Captain Ruprecht

The Western Powers are said to have placed orders in the United States totalling 5,500 to 8,000 airplanes. France alone is supposed to have ordered 4,600 motors from various firms but, due to the demands of the American War Department, the ability to fill these orders is somewhat restricted.

26 January 1940

GREATER GERMANY'S WAR OF LIBERATION, 1940.

[Grossdeutschlands Freiheitskrieg 1940.]

25. The latest English and French "successes" and attitudes in comparison with the actual conduct of the war on the western front and against England between 15 and 21 January 1940.

THE GREAT EXERCISES OF THE FIRST ARMY (U. S. A.).

[Die grossen Übungen der 1. amerikanischen Armee.] Colonel v.Xylander

An account of the First Army Maneuvers at Plattsburg, New York, during August 1939.

THE COLD-BLOODED HORSE AS AN ARMY DRAFT HORSE.

[Das Kaltblutpferd als Zugpferd im Heer.] Major Buhle

The German medium weight cold-blooded horse was introduced into the German Army for the first time in 1890, as a draft horse for heavy artillery. The great mobility of the German artillery during the World War proved its efficiency.

The German peacetime army had 180,000 horses, 3,000 of which were cold-blooded. During the World War the army had about 1,500,000 horses, among which were approximately 500,000 cold-blooded, and other strains crossed with cold-blooded horses.

In addition to the above, this article quotes numerous statistics on the use of cold-blooded and warm-blooded horses, stressing the practical value of the cold-blooded animal for the performance of heavy duty.

CONCERNING THE AERIAL ARMAMENT OF THE NORTH COUNTRIES.
[Von der Luftrüstung der Nordstaaten.]

This subject summarizes the development of military aviation in Denmark, Sweden, Norway and Finland during the post World War period.

2 February 1940

GREATER GERMANY'S WAR OF LIBERATION, 1940.
[Grossdeutschlands Freiheitskrieg 1940.]

26. The events of the war in the west between 20 and 28 January 1940.

THE CONDUCT OF THE WAR DURING THE MARNE CAMPAIGN, 1914.
[Die Führung im Marne-Feldzug 1914.] (I) General Wetzell

General Wetzell comments on the book, with the above indicated title, written by Lieutenant Colonel Müller-Loebnitz. This book contains 118 pages with 27 sketches. It contains more than is usually understood as the "Battle of the Marne," covering the progress of the war from its beginning to the retreat from the Marne. This installment is devoted mainly to comments on the author's account of the application of the Schlieffen Plan.

THE GREAT EXERCISES OF THE FIRST ARMY (U. S. A.).
[Die grossen Übungen der 1. amerikanischen Armee.] (II) Colonel v. Xylander

In this installment the author states that the essence of the critique is expressed in the remarks of General Drum. In short, these remarks may be summed up as follows:

"An improvised field army is worth nothing. The U. S. A. must have a peacetime field army, one that need not be strong in numbers but whose units are perpetually maintained and often required to undergo training at war strength."

The maneuver indicated marked progress in contrast with the previous condition of the army. But it is only the first step to a necessary further development.

9 February 1940

GREATER GERMANY'S WAR OF LIBERATION, 1940.
[Grossdeutschlands Freiheitskrieg 1940.]

27. The war objectives of the Western Powers and the progress and events of the war in the west between 29 January and 4 February 1940.

THE CONDUCT OF THE WAR DURING THE MARNE CAMPAIGN, 1914.
[Die Führung im Marne-Feldzug 1914.] (II) General Wetzell

The major portion of this installment is devoted to the Battle of the Frontiers.

GERMAN BOMBERS IN THE WORLD WAR, 1918.
[Deutsche Bomber im Weltkrieg 1918.]

Near the close of the World War the following plan for the employment of bombers was contemplated:

- (1) To attack Rheims, simultaneously
 - (a) Blocking the Marne crossings at Abbeville and Amiens in order to delay hostile reinforcements from Flanders;
 - (b) Attacking the reserves of the hostile army. While the Allied planes were flying back and forth they were to be attacked.
- (2) If the German attack were successful and the Germans were able to remain in the area between the Marne and Rheims, then
 - (a) The channel ports were to be attacked;
 - (b) The bridges across the Marne were to be attacked in order to delay the bringing up of the Foch reserves.

The execution of this plan, however, did not materialize, as the aerial attacks were not coordinated with those on the ground. Nevertheless, the English acknowledge three German successes that would have proved the worst possible catastrophes had they been coordinated properly with the attacks on the ground, namely:

- (1) The destruction of the Etaples viaduct on 30-31 May 1918, followed by a blocking of the railroad on the following night for a period of 24 hours.
- (2) Attack against a munitions depot in Blargies and Saigneville on 27 May 1918, resulting in the destruction of 69,000,000 rounds of rifle ammunition.
- (3) Attack against the motor pool in Calais on 12-13 August, resulting in the destruction of forty per cent of the total material.

RIFLE MARKSMANSHIP.
[Scharfschützen.] Colonel Blümler

The author comments on the lack of interest in rifle marksmanship since the World War due to the interest aroused by the developments in machine guns and heavy weapons.

16 February 1940

GREATER GERMANY'S WAR OF LIBERATION, 1940.
[Grossdeutschlands Freiheitskrieg 1940.]

28. The events of the war between 5 and 11 February 1940.

THE CONDUCT OF THE WAR DURING THE MARNE CAMPAIGN, 1914.
[Die Führung im Marne-Feldzug 1914.] (III) General Wetzell
In this installment General Wetzell comments on the march on Paris.

A FOREST ENGAGEMENT.
[Ein Waldgefecht.] Sergeant Jagmann

FOREIGN VIEWS ON THE PRESENT WAR.
[Gedanken des Auslandes über den gegenwärtigen Krieg.]

In this installment the views of the United States of America are presented. These views are taken largely from an article which appeared in the September-October 1939 issue of the "Infantry Journal" and from the comments of George Fielding Eliot.

23 February 1940

GREATER GERMANY'S WAR OF LIBERATION, 1940.
[Grossdeutschlands Freiheitskrieg 1940.]

29. The events of the war between 12 and 18 February 1940.

THE CONDUCT OF THE WAR IN THE MARNE CAMPAIGN, 1914.
[Die Führung im Marne-Feldzug 1914.] (IV) General Wetzell

This installment, "The Marne Drama," concludes the review of Lieutenant Colonel Müller-Loebnitz' book. The author comments on the operation which led to the turning of the German right flank and the errors of the German command which were responsible for the loss of a victory that lay within easy reach.

THE DEVELOPMENT OF ARTILLERY EMPLOYMENT IN THE DEFENSIVE DURING THE WORLD WAR.
[Die Entwicklung des Artillerieeinsatzes bei der Abwehr im Weltkrieg.] Lieut. General Marx

The employment of artillery in the defensive passed through a noteworthy, irregular course during the war. It gave us two lessons:

- (1) That the purely theoretically correct procedure, then in practice, was impracticable, and even wrong, if the fundamental technical conditions were lacking.
- (2) That during the course of a prolonged war every method gives rise to a counter-method. Such being the case, we must always think in terms of the enemy. What counter-method would we devise, if we were in his place, and having devised it, what could be done to combat it?

MILITARY ENGINEER

May-June 1940

RUSSIA IN THE PAST. Lieut. General A. M. Uzevovich, American International Academy

THE QUARTERMASTER CORPS IN PEACE AND WAR. Major Brunson
THE CHINESE INCIDENT AND THE AMERICAN REVOLUTION. Major Colby
BETWEEN EAST AND WEST—PROBLEMS OF CONTEMPORARY HUNGARY.

Dr. Koppányi

ANGLO-MILITARY NOTES. Roger Shaw
ARMY ACTIVITIES IN THE PUERTO RICO DEPARTMENT. Lieut. Colonel Ferrin

July-August 1940

SAFEGUARDING THE WESTERN HEMISPHERE. Brigadier General George V. Strong

TRANSPORTATION—ITS USE AND MISUSE IN PEACE AND WAR. M. J. Gormley

STRATEGIC CANALS. 1st Lieutenant A. D. Starbird
GEOGRAPHIC SERVICE IN THE FRENCH ARMIES DURING THE WAR, 1914-1918. General G. Perrier

MILITARY SURGEON

May 1940

TRANSPORT BY AIR OF THE SICK AND WOUNDED. Major General Erich Hippke, German Army

THE INFLUENCE OF SCURVY UPON MARITIME HISTORY. Commander Roddis, U. S. Navy

THE MISSION OF THE MEDICAL DEPARTMENT, UNITED STATES ARMY. Dr. Walter A. Bloedorn

THE PHILIPPINES AND THE "NEW-COMER." Colonel Michie

June 1940

PEACE TIME TRAINING TO MEET MOBILIZATION NEEDS. Brigadier General Fairbank

ARTIFICIAL LIMBS. Lieut. Colonel Steindler
LONG DISTANCE TRANSPORTATION OF THE WOUNDED BY AIR AT HIGH ALTITUDES. Colonel Kowalzig, German Army

MODERN ANESTHESIA FOR WAR SURGERY. Lieutenant Donaghy
CAUSES OF FAILURE IN THE PHYSICAL EXAMINATION FOR FLYING AS SEEN
IN CADET APPLICANTS. Captain Leedham
HINTS ABOUT MARCHING FEET. Captain Hansen
MARCH FOOT. H. W. Meyerding, M.D., & G. A. Pollock, M.D.
WATER SUPPLIES AT ARMY POSTS AT THE TIME OF INAUGURATION OF THE
SANITARY REPORT. Colonel Lull

July 1940

A SHORT SYNOPSIS OF MILITARY SURGERY. Colonel Tarnowsky
AIR TRANSPORTATION OF THE SICK AND WOUNDED A MEDICAL PROBLEM.
Dr. Tönis, Staff Surgeon, German Air Forces
STANDING OPERATING PROCEDURE FOR A MEDICAL BATTALION, PEACE
STRENGTH. Captain Zuver

August 1940

THE FOUNDATION OF AMERICAN METEOROLOGY BY THE UNITED STATES
ARMY MEDICAL DEPARTMENT. Lieut. Colonel Hume
TRANSPORTATION OF THE WOUNDED BY PLANE. Frederick Schmidt, Chief
Flight Surgeon, German Air Forces

NAVAL INSTITUTE PROCEEDINGS

May 1940

ARE WE READY? Brockholst Livingston
SECRETS OF MINE WARFARE. Captain A. P. Lukin, Imperial Russian
Navy
HISTORIC SHIPS OF THE NAVY, "PORPOISE." Robert W. Neeser
THE INTERRELATION OF FOREIGN AND NAVAL POLICIES IN AMERICAN
HISTORY. Commander M. F. Talbot
MORALE IN THE NEW WORLD WAR. Commander Witherspoon
THE BATTLES OF HELLES AND LEMNOS. K. L. Rankin

June 1940

SEA POWER AND CENTRAL ASIA. Felix Howland
PERFORMANCE OF A MEDIEVAL CANNON. Translated by Prof. William
Popper, from Ibn Taghri Birdi's "Chronicles of Egypt"
PERFORMANCE OF ABU'L-MAHASIN'S ROYAL CANNON. Commander
Roper
THE NAVAL SIDE OF THE SPANISH CIVIL WAR, 1936-39. William H.
Davis
THE VIKINGS. Vice Admiral Rodgers, U. S. Navy, Retired
THE BATTLE OF MANILA BAY. John T. McCutcheon and Thomas A.
Bailey

July 1940

THE CASE FOR THE BIG CAPITAL SHIP. Rear Admiral J. K. Taussig
SOME SPECIAL USES OF SMOKE SCREENS. Captain R. C. Parker
MOTOR TORPEDO BOATS: A TECHNICAL STUDY. Gordon Adamson and
Douglas Van Patten

August 1940

A SURVEY OF ATLANTIS. Captain Rude, U. S. Coast and Geodetic Sur-
vey
BATTLESHIPS. Lieut. Commander Hamilton

DIE PANZERTRUPPE (Germany)

By MAJOR WM. H. SPEIDEL, Infantry

February 1940

DRIVING IN AND CONTROL OF MOTOR CONVOYS.
[Kolonnenfahren und -führen.] Captain von Rida
Commanding a convoy does not mean driving off in the fastest motor
vehicle, and checking at the destination those who happened to complete
the trip. It is a mission involving command, one that exacts demands that
have to be learned like all others. It requires preparations and, during the
march, continuous attention to duty. The operation involves the acquisition
of definite and indispensable knowledge.

TANKS AND SCOUT CARS IN FRANCE AND ENGLAND.

[Panzerkampfwagen und Panzerspähwagen in Frankreich und Eng-
land.]

This article concludes the discussion of the various types of tanks and
armored vehicles employed by the leading powers. It contains twelve illus-
trations of the tanks and scout cars used by France and England.

A SPECIALLY CONSTITUTED TRANSPORT GROUP SUPPLIES OUR MECH-
ANIZED TROOPS.

[Transportgruppe z. b. V. versorgt unsere Panzertruppe.] W. Pas-
chasius

This is the conclusion to the article which appeared in the January issue
under the same title. It presents a further discussion on the subject of sup-
plying fast moving ground troops by dropping supplies from airplanes.

BYPATHS OF ANTITANK DEFENSE.

[Panzerabwehr auf Abwegen.]

Two personal experience stories as told by two lance corporals.

RASSEGNA DI CULTURA MILITARE (Italy)

By LIEUTENANT COLONEL E. M. BENITEZ, Coast Artillery Corps

November 1939

THE ARMED FORCES OF FASCIST ITALY.

[Le Forze armate dell'Italia Fascista.] General Scala

Review of a book by Tomaso Sillani, in which the author outlines the
development and improvement of the Italian army, navy and air forces
during the Fascist regime. The Italian Empire has expanded in Libya, Abyss-
inia and Albania.

MILITARY DISCIPLINE IN THE ITALIAN REGENERATION.

[La disciplina militare nel risorgimento italiano.] General Boccaccia

Discipline means active solidarity among a group of men working
together for a common social interest.

Regeneration is the name given to that particular period in contem-
porary Italian history, when the population of the different provinces in
which the nation is divided have shown a tendency to unite under a single
indispensable state.

The author traces the history of Italy from 1814 to date, paying particu-
lar attention to the Fascist regime. The Regeneration proper dates from
1922, the year that Mussolini announced the principle that a new state would
be built, based upon discipline.

SUPPLY IN BATTLE.

[L'alimentazione della battaglia.] Lieut. Colonel Cappuccini

The author discusses the increase in size of the large units from the time
of Napoleon to recent times. Today there are various types of large units
as follows: the infantry division, normal type; the alpine division, which
organized for mountain warfare is given a large freedom of action; the fast
division (celere), organized for rapid movements; the motorized division,
which is really an infantry division that can be moved quickly by motors;
the mechanized division; the army corps, the army and group of armies.

Supply in battle is today one of the most difficult, yet most indispensable
means essential to success in battle.

THE EUROPEAN WAR.

[La guerra in Europa.] (I) Lieut. Colonel Blatto

A review of the main events of the second month of the war in Europe.
The causes of the Polish defeat are enumerated as follows:

- (1) Preponderance of German mechanized and motorized units.
- (2) Complete freedom of action given by the Germans to their division
and corps commanders.
- (3) Cooperation of attack and bombardment aviation with the ground
troops, which has become a normal function of the German army,
once mastery of the air has been secured.
- (4) Impossibility of utilizing the Polish cavalry, particularly in carrying
out its traditional strategical missions as used to be the case in
former wars.

EMPLOYMENT AND EFFICIENCY OF RADIO COMMUNICATION DURING
THE ABYSSINIAN CAMPAIGN.

[Impiego e rendimento dei mezzi radio nella campagna per la con-
quista dell'Impero.] (I) Colonel Casola

The Abyssinian campaign furnished some lessons concerning the use of
radio communication as follows:

- (1) Waves in excess of 100 yards were greatly disturbed by atmospheric
conditions.
- (2) Dry batteries gave good service in the hills, but heat cut down their
life by one-half.
- (3) A man could not work a hand-driven generator for more than 10
minutes at a time, so that numerous reliefs became necessary. A
pedal-driven generator of German manufacture was used with good
results; however, it was difficult to maintain a constant speed.
- (4) Oil-engine-driven sets proved satisfactory; however, they were found
to be unsuitable for continuous work.

December 1939

RELATIONSHIP WITH OUR EX-ALLIES DURING THE WORLD WAR.

[La nostra grande guerra nei rapporti con gli ex alleati.] General
Corselli

General Corselli maintains that Italy did not receive a fair deal from
her ex-Allies, who after the cessation of the war regarded Italy not only as
a rival but as an enemy.

THE EUROPEAN WAR.

[La guerra in Europa.] (II) Lieut. Colonel Blatto

A review of the third month of the war. Two strong armies, ready to
fight, well equipped, face each other with no intention of offensive action.
The clash must come sooner or later, the pause being justified on the grounds
of the enormous expenditures of men and matériel which a modern offensive
entails.

The author discusses briefly the Soviet-Finnish operations and the losses
inflicted by mines upon British shipping and that of neutral countries.

EMPLOYMENT AND EFFICIENCY OF RADIO COMMUNICATION DURING THE ABYSSINIAN CAMPAIGN.

[Impiego e rendimento dei mezzi radio nella campagna per la conquista dell'Impero.] (II) Colonel Casola

The final distribution of radio stations in Italian East Africa was as follows:

A central station was established at Asmara, where two transmitting stations were erected. One of them was able to contact with Addis Ababa and various headquarters of the Italian Government at all times and could also transmit short-wave messages to Rome for 12 hours out of 24. The other station could transmit short wave messages to Rome at all hours of the day or night. Smaller stations were established at Mogadiscio and Harrar. The author had the distinction of broadcasting the Italian occupation of Addis Ababa to Rome and to the whole world.

January 1940

COVER IN PEACE-TIME.

[Copertura di pace.] General Bobbio

Italy is fortunate in that the Alps furnish her protection against an invading enemy. It is important, therefore, to keep the inhabitants of the mountain districts happy and contented. This can be done by granting them special privileges, by the construction of mountain roads and, in general, by making life more pleasant so as to counteract the tendency to migrate to the large towns.

ITALIAN MILITARY THOUGHT FROM THE NAPOLEONIC WARS TO OUR DAYS.

[Il pensiero militare italiano dalle guerre napoleoniche ai nostri giorni.] General Maravigna

The Prussian victories over Austria in 1866 and over France in 1870 gave great prestige to the German army and made it the model for Europe to follow. The Boer War and the Russo-Japanese War also changed many preconceived ideas.

General Maravigna claims that Italy has copied these ideas adapting them carefully to her Latin temperament.

THE 23-DAY WAR.

[La guerra dei 23 giorni.] Brigadier General Castagna

The writer summarizes the recent Polish campaign. The Polish Plan provided for:

- (1) Defense of the Corridor to the last ditch.
- (2) An offensive against East Prussia.
- (3) A defensive attitude along the rest of the frontier.

The Poles never should have attempted to defend the Corridor. An offensive against Prussia never should have been contemplated because of Germany's superiority, while the defensive movement should have been strongly organized along the great rivers: the Narew, the middle and lower Vistula and the Wartha. The marshy Kutno region should have been kept under observation only.

The actual disposition of the Polish forces meant dispersion. "He who would defend everything, defends nothing."

General Castagna then describes the German Plan with which our readers are familiar (see December 1939 issue of Military Review). The offensive action of the German air force consisted of three phases as follows:

- (1) Control of the air.
- (2) Destruction of Polish communications system.
- (3) Close cooperation with the ground forces.

THE EUROPEAN WAR.

[La guerra in Europa.] (III) Lieut. Colonel Blatto

Comments on operations of the fourth month of the war in Europe, of which the Soviet-Finnish war was the main event.

The author has words of praise for the Finns. On the other hand, he criticises the scuttling of the Graf Spee as unworthy of the traditions of the German Navy. The end of the German pocket battleship was very different from that of the Emden or the Scharnhorst in the World War, 1914-1918.

REVUE D'ARTILLERIE (France)

[Publication of this magazine was suspended following the combined September-October 1939 issue.]

BY CAPTAIN M. R. KAMMERER, Infantry

August 1939

ARTILLERY OF THE 45TH DIVISION IN THE BATTLE OF THE AISNE.

[L'artillerie de la 45e division dans la bataille de l'Aisne.] General Tixier

General Tixier, commander of the artillery of the French 45th Division in 1918, gives an account of the operations of his command during the German drive of May, 1918. The 45th Division moved into the Trigny sector on the Aisne 21 May. The German attack was launched 27 May, and continued unabated through 1 June when the French 45th Division was finally relieved.

September-October 1939

AN HISTORICAL ACCOUNT OF THE EMPLOYMENT OF ARTILLERY FROM MARIGNAN TO WATERLOO.

[L'emploi de l'artillerie au cours de l'histoire.] General Peyrègne

In these last two numbers of the Revue d'Artillerie, General Peyrègne discusses the developments and operations of artillery during the revolutionary period (1792-1796) and during the early years of the Empire. These are the fifth and sixth in the series of articles covering artillery employment between 1515 (Battle of Marignan) and 1815 (Waterloo).

Perhaps the outstanding feature of artillery during the revolutionary period was the development of "l'artillerie volante," light, mobile artillery in which the cannoneers were all mounted on horses. Because of their increased mobility, such units usually accompanied the cavalry, and were always found in advance or rear guards. They always moved at a gallop, paying little attention, unfortunately, to the condition or safety of their animals.

Artillery played a capital role in the wars of the French Revolution, particularly in the decisive battles — Valmy, Jemmapes, Fleurus. Without artillery, the troops seemed to lose confidence; with superior artillery, the infantry was invincible. The bayonet and artillery fire were considered the only effective means of victory.

ARTILLERY OF BYGONE DAYS.

[L'artillerie d'autrefois.] Major Regnault

The author, using the memoirs of General Regnault, paints a picture (in two parts) of artillery training and inspections in France and her colonies in the latter part of the nineteenth century. General Regnault was one of those officers who, though too young for service in the War of 1870, could recall the bitter details of the French defeat and were determined that the French artillery would give an excellent account of itself in any future war. General Regnault lived to participate in and end his career with the victory of 1918. Particular attention is given in this article to the conscientious efforts of Generals Nismes and de Roince, on whose staffs General Regnault served at various times between 1886 and 1899.

REVUE DES QUESTIONS DE DEFENSE NATIONALE (France)

BY CAPTAIN M. R. KAMMERER, Infantry

January 1940

ALPINE CHASSEURS.

[Les chasseurs alpins.] Henri Bordeaux

Mountain warfare calls for special troops, and Hannibal, Caesar, Charles VIII, Louis XII, Napoleon and others admitted that operations in the Alps were impossible unless the troops were especially trained for such warfare, were thoroughly accustomed to the rigors encountered in such terrain.

The Italians were the first to create Alpine troops, in 1872. Six years later, several battalions of French troops from the Lyon district held maneuvers in the lower Alps. In 1888 a law was passed providing for the organization of the Alpine Chasseurs, and since that time there have been units of this elite corps in the Alpine stations, winter and summer. Special training, special equipment enable the Chasseurs to maneuver in any kind of mountainous terrain in any kind of weather.

During the World War, the Chasseurs were pulled out of the Alps to fight in various sectors along the Western Front, invariably giving excellent accounts of themselves. During the recent war, they had but a very brief occasion to prove their worth in the last few days of operations against the Italians.

THE PROTECTION OF HISTORICAL MONUMENTS IN TIME OF WAR.

[La protection des monuments historiques en temps de guerre.] Jean Verrier

As a result of the experience gained in the World War, the French were prepared, at the outbreak of hostilities in September, 1939, to safeguard their countless works of art. Movable art pieces, such as paintings, tapestries, statues, etc., were of course, taken to places of safety. The world-renowned stained-glass windows of the cathedrals were taken out piece by piece and were carefully catalogued for removal to bomb-proof shelters. The cathedrals themselves were protected as much as possible by sandbags, and every precaution was taken to prevent and fight fires. Fire extinguishers and hose lines were placed in readiness in the higher parts of all edifices. In addition, there were delegated, from the immediate vicinity of the famous cathedrals and chateaux, groups of technicians who, if necessary, could make temporary repairs to damaged structures. Such temporary repairs are believed to have saved the transept of the Cathedral at Reims from crumbling during the World War.

[NOTE.—Recent reports indicate that very little damage was done to the more celebrated French cathedrals and museums during the Battle of France.]

February 1940

THE LEGION OF HONOR.

[La Légion d'honneur.] General Nollet

The Legion of Honor, founded 19 May 1802, replaced the old orders of chivalry, but where the latter required as qualification an aristocratic birth, the Legion demanded no other reference than courage and personal valor.

It is to the credit of the Legion of Honor that it has survived six changes of government in France since its creation with only increases in its own prestige and improvements in its policies. Originally planned as a purely

military order, it was quickly realized that civil services were as worthy of recognition as military services.

Decorations have not been limited to men nor, for that matter, to French individuals. Many women have been decorated with the Legion's "Cordon Rouge," and thousands of foreigners are "legionnaires." Numerous towns, many regimental colors have received the decoration of the Legion of Honor.

THE POLISH CAMPAIGN.

[La campagne de Pologne.] General Boucherie

An accurate account is rendered in this article of the German campaign in Poland—the causes, the opposing forces, their strategies, and the operations—all of which have been treated in much the same general manner in many publications.

General Boucherie concludes his article with three lessons:

(1) A nation must have a military organization and a strategical doctrine conforming to its location and political aims. Treaty guarantees are of little value unless the means are available to have those guarantees respected.

(2) The principles of war do not change, but the methods of applying those principles will vary as technical means are developed. Absolute control of the air and close cooperation between air and ground forces are necessary for the success of large mechanized units operating over extended areas.

(3) "Total war" means that centers of activity in the interior must be defended as well as frontiers. It means that the morale of the mass of the population in rear areas has become as important as the morale of the front-line soldiers.

FOUR MONTHS OF NAVAL WARFARE.

[Quatre mois de guerre navale.] Paul Chack

An interesting article is presented here on the operations of the fleet of Admiral von Spee from 4 August to 8 December 1914. Instructions from Berlin had simply directed the German vessels at sea to destroy as much enemy commerce as possible without committing themselves to battle, individually or in groups, with any portion of the Allied fleets. Admiral von Spee was not particularly pleased with such operations for he believed that his fleet was sufficiently well trained to cope with such portions of the opposing navies as might be encountered in Pacific waters. His easy victory over Cradock's squadron at Coronel, Chile, 1 November 1914, proved he was right.

However, following this battle, the British Admiralty directed its ships to join forces, seek and destroy von Spee's squadron. At the same time Berlin directed von Spee to return to Germany. Von Spee decided to attack the Falkland Islands, destroy the radio station and arsenal located there. His decision was made too late. There were more British vessels there than he had anticipated. The defeat of the von Spee squadron in the ensuing battle eased the minds of the British and their Allies as far as their control of the sea lanes was concerned.

It is quite probable that the German Admiralty and Admiral von Spee too were unaware of the devastating effect upon allied commerce of operations by isolated raiders, such as the Emden. This cruiser, commanded by Captain Muller, roamed the Indian Ocean and the Gulf of Bengal. In a little less than two months, it encountered and sank twenty commercial vessels and two allied naval vessels. Its daring, gentlemanly commander conducted these operations without harm to a single passenger or sailor on any of the commercial ships. After sinking the French torpedo boat Mousquet, he picked up the survivors and transferred them to a British freighter, directing the skipper of the freighter to take the injured at full speed to the hospital at the Dutch port of Sabang. The Emden was finally caught by the British cruiser Sydney, 9 November 1914, as it was attempting to destroy the telegraph cable junction on Cocos Island, southwest of Java.

March 1940

VAUBAN AND OUR NORTHEAST FORTIFICATIONS.

[Vauban et nos fortifications du nord-est.] General Debeney

The principles upon which the location and construction of the Maginot fortifications were based are no different from those used by Vauban in planning his seventeenth century fortifications. Flanking fires to furnish protection to adjacent strong points, defenses in depth to halt penetrations of the front lines—these were the principles which guided Vauban as well as the builders of the Maginot Line and the Westwall.

It is appropriate at this time to point out that Vauban considered fortifications as mere auxiliaries for armed forces. Victory cannot be gained without well trained troops, thoroughly familiar with the uses, offensive as well as defensive, of fortifications.

ROYAL ENGINEERS JOURNAL (Great Britain)

June 1940

THE PROBLEM OF ACCOMMODATING THE ARMY ON THE OUTBREAK OF WAR.
Major General Taylor

VETERINARY BULLETIN

(Supplement to "The Army Medical Bulletin")

April 1940

HORSES IN CHEMICAL WARFARE. Captain Mace
THE HORSE AND THE ARMY. Lieut. Colonel Hardy

WISSEN UND WEHR (Germany)

By MAJOR WM. H. SPEIDEL, Infantry

December 1939

THE GERMAN WAR AGAINST ENCIRCLEMENT.

[Der deutsche Krieg gegen die Einkreisung.] (III) Colonel v.Xylander

The author covers the operations on the western front and on the sea for the month of November 1939.

THE DEVELOPMENT OF ATTITUDES ON MODERN ARMIES SINCE THE WORLD WAR.

[Die Entwicklung der Anschauungen über neuzeitliche Heere seit dem Weltkriege.] General Muff

This study is concerned mainly with the possibilities which may develop in the reconstruction of the German, French, English and Italian armies.

Which of the new weapons will have the greater effect—the aerial ones on our side or the restricting ones of the enemy? Tanks and aircraft versus antitank guns and antiaircraft weapons. Again there crops up the concept of "employment in mass." When wave after wave rolls onward and one echelon succeeds another, will defensive means and cover still be available? Perhaps are not tanks and airplanes the weapons that will decide not only the battles, but the war of the future? Or will it again be the brave infantry, equipped with modern weapons and closely supported by artillery? Who knows?

"COMMITTEE OF IMPERIAL DEFENSE" 1904-1939; 35 YEARS OF THE BRITISH COMMITTEE OF NATIONAL DEFENSE.

["Committee of Imperial Defence" 1904-1939, 35 Jahre britischer Reichs-Verteidigungsausschuss.]

The sub-titles, tables and chart used in this article are accompanied by English translations.

THE FIRST YEAR OF THE PRUSSIAN ARMY REFORM, 1807-08. THE RECENT PUBLICATION OF THE PRUSSIAN STATES ARCHIVES.

[Das erste Jahr der Preussischen Heeresreform 1807/08.] Dr. Kessel

The author reviews the above-mentioned publication, which deals mainly with the reorganization of the Prussian state and the military system under Stein and Hardenberg, and the influences on army reform as exercised by Scharnhorst and Gneisenau.

THE FUEL SUPPLY SITUATION IN FRANCE.

[Wie steht es mit Frankreichs Treibstoffversorgung?] Dr. Flemmig

During the past year, according to Dr. Flemmig, France consumed seven million tons of fuel, including two and a half million tons of gasoline; which means that, as regards mineral oil consumption, France occupies fourth place, trailing U. S. A., Russia and Great Britain. The local production of crude oil (70,000 tons during the past year) is insignificant as compared with the total amount consumed.

In 1938 France imported 8,140,000 tons of fuel oil, of which 3,140,000 tons came from Iraq; 2,300,000 tons from the United States; 600,000 tons from Venezuela; 400,000 tons from Peru; and 300,000 tons from Colombia. The author comments that these sources are all distant from France and that there is no guarantee that the routes therefrom will remain open.

In addition to the above, the article presents a number of interesting statistics on refineries and synthetic fuel products.

January 1940

THE GERMAN WAR AGAINST ENCIRCLEMENT.

[Der deutsche Krieg gegen die Einkreisung.] (IV) Colonel v.Xylander

December on the western front.

THE COLLECTION AND UTILIZATION OF MILITARY EXPERIENCES DURING THE WAR.

[Sammlung und Verwertung militärischer Erfahrungen während des Krieges.] General Geyer

To illustrate the value of experience, the author quotes the following from Frederick the Great: "Of what value is experience if it is not associated with meditation . . . It is only by associating mentality with work that man differs from the beast of burden. The ass, that carried Prince Eugene's pack saddle for ten years, did not thereby become a better tactician."

Accounts as related by individuals fighting at the front are varied, many of them being influenced by the narrow sphere in which the individual operates. It would be well to have these accounts pass through control points where they may be carefully evaluated and recorded. In accordance with this idea, General Geyer has presented the following plan:

- (1) The collection and utilization of war experiences during the war must be arranged for by the War Department.
- (2) The work must be conducted in close cooperation with existing authority. It will be the personal responsibility of the commanders, the general staff officers and adjutants. Only in the highest commands will such authority be delegated to others, and then only to someone within the operation section.

(3) This will apply mainly to tactical experiences in which cooperation is a decisive factor. Matters pertaining to organization and technique will be undertaken mainly by peacetime functionaries.

(4) Any person who has anything to say must be made to feel that he will be heard. The flow of experiences toward the top must not be severely checked.

(5) The publication of experiences, new regulations and weapons, and the creation of new organizations must be centralized.

(6) The control stations must function with rapidity and know just how much and what they should release.

(7) Every soldier must be prepared to acquire new ideas in war and to discard much of what he has learned in peacetime.

THE SPANISH CIVIL WAR.

[Der spanische Bürgerkrieg.] Colonel v.Xylander

★

General

AMERICAN HISTORICAL REVIEW

July 1940

SEWARD AND THE POLISH REBELLION OF 1863. Harold E. Blinn
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GEOGRAPHICAL ASPECTS OF THE DEFENSE OF THE NETHERLANDS. Samuel Van Valkenburg

PETROLEUM IN THE ECONOMY OF VENEZUELA. Eugene W. Miller

July 1940

TUNG OIL PRODUCTION AND TRADE. G. F. Deasy

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June 1940

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A SKETCH-MAP OF SOUTH-EAST EUROPE. I. HUNGARY. II. RUMANIA. III. JUGOSLAVIA. IV. BULGARIA. V. GREECE. VI. CONCLUSION.

* * * * *

"The commanders of armies are more to be pitied than one would think. Without listening to them, all the world denounces them, the newspapers ridicule them, and yet, of the thousands who condemn them, there is not one that could command even the smallest unit."

—Frederick the Great

"In my opinion, we owe the happy results of our battles and campaigns much rather to our work in time of peace than to chance or to the brilliant inspirations of some genius."

—Prince Frederick Charles

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AND

KEY TO ABBREVIATIONS

A Ord = Army Ordnance

A Quar = Army Quarterly (Great Britain)

Cav Jour = Cavalry Journal

Cav Jour [GB] = Cavalry Journal (Great Britain)

Chem War Bul = Chemical Warfare Bulletin

CA Jour = Coast Artillery Journal

FA Jour = Field Artillery Journal

Inf Jour = Infantry Journal

Jour Amer Mil Inst = Journal of the American Military Institute

Jour RAMC = Journal of the Royal Army Medical Corps (Great Britain)

Jour R Art = Journal of the Royal Artillery (Great Britain)

Jour RUSI = Journal of the Royal United Service Institution (Great Britain)

Jour USII = Journal of the United Service Institution of India (Great Britain — India)

Kras = Krasnaya Zvezda (Russia)

MC Gaz = Marine Corps Gazette

Mil Mitt = Militärwissenschaftliche Mitteilungen (Austria)

Mil-Woch = Militär-Wochenblatt (Germany)

Mil Eng = Military Engineer

Mil Surg = Military Surgeon

Nav Inst Proc = Naval Institute Proceedings

Panzer = Panzertruppe (Germany)

Ras Cul Mil = Rassegna di Cultura Militare (Italy)

Rv d'Art = Revue d'Artillerie (France)

Rv Def Nat = Revue des Questions de Défense Nationale (France)

Roy Eng Jour = Royal Engineers Journal (Great Britain)

Vet Bul = Veterinary Bulletin

Ws & Wr = Wissen und Wehr (Germany)

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Ec Geog = Economic Geography

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"I have not begun to fight!"

—JOHN PAUL JONES (1747-1792)

For two hours, on the fair evening of September 23, 1778, Jones' flagship *Bonhomme Richard*—a refitted merchantman—had been engaged with the British frigate *Serapis*, Captain William Pearson, in one of the most desperate naval battles on record, off Flamborough Head. So close were the ships locked that their guns grated and the flames from the muzzles seared the faces of the sailors. There had come a momentary slackening in the American fire, and Pearson, in hard straits, grasped it as an encouraging sign. "Have you struck?" he shouted through the smoke to his adversary. The round-shouldered, unprepossessing Jones, struggling to keep his footing on a deck slippery with blood, sent back his famous reply. . . . For another hour the fight went on. The *Serapis* took fire; her mainmast fell into the sea; two-thirds of her officers and crew were killed or wounded. The situation was little better on the *Bonhomme Richard*; only a fifth of her three hundred and seventy-five men were in shape to fight. Finally at half past ten o'clock, Pearson, dismayed at the failure of his last attempt to board, hauled down his grimy and tattered colors. The next day the American ship went to the bottom, after Jones had abandoned her and gone on board his prize. . . . Some time afterward Jones heard that Pearson, though defeated, had been knighted for his battle, and he remarked:

"If I fall in with him again, I will make a lord of him!"

—*One Thousand Sayings of History.*

American Participation In The World War 1914-1918*

THE MEN WHO SERVED

(1) The number of men serving in the armed forces of the Nation during the war was 4,800,000, of whom 4,000,000 served in the Army.

(2) In the War with Germany the United States raised twice as many men as did the Northern States in the Civil War, but only half as many in proportion to the population.

(3) The British sent more men to France in their first year of war than we did in our first year, but it took England three years to reach a strength of 2,000,000 men in France, and the United States accomplished it in one-half of that time.

(4) Of every 100 men who served, 10 were National Guardsmen, 13 were Regulars, and 77 were in the National Army (or would have been if the services had not been consolidated).

(5) Of the 54,000,000 males in the population, 26,000,000 were registered in the draft or were already in service.

(6) In the physical examinations the States of the Middle West made the best showing. Country boys did better than city boys; whites better than colored; and native born better than foreign born.

(7) In this war twice as many men were recruited as in the Civil War and at one-twentieth of the recruiting cost.

(8) There were 200,000 Army officers. Of every six officers, one had previous military training with troops, three were graduates of officers' training camps, and two came directly from civil life.

SIX MONTHS OF TRAINING

(1) The average American soldier who fought in France had six months of training here, two months overseas before entering the line, and one month in a quiet sector before going into battle.

(2) Most soldiers received their training in infantry divisions which were our typical combat units and consisted of about 1,000 officers and 27,000 men.

(3) Forty-two divisions were sent to France.

(4) More than two-thirds of our line officers were graduates of the officers' training camps.

(5) France and England sent to the United States nearly 800 specially skilled officers and noncommissioned officers who rendered most important aid as instructors in our training camps.

TRANSPORTING 10,000 MEN A DAY

(1) During our 19 months of war more than 2,000,000 American soldiers were carried to France. Half a million of these went over in the first 13 months and a million and a half in the last 6 months.

*Extracts from *The War With Germany—A Statistical Summary*, by Colonel Leonard P. Ayres.

(2) The highest troop-carrying records are those of July, 1918, when 306,000 soldiers were carried to Europe, and June, 1919, when 364,000 were brought home to America.

(3) Most of the troops who sailed for France left from New York. Half of them landed in England and the other half landed in France.

(4) Among every 100 Americans who went over 49 went in British ships, 45 in American ships, 3 in Italian, 2 in French, and 1 in Russian shipping under English control.

(5) Our cargo ships averaged one complete trip every 70 days and our troop ships one complete trip every 35 days.

(6) The cargo fleet was almost exclusively American. It reached the size of 2,700,000 deadweight tons and carried to Europe about 7,500,000 tons of cargo.

(7) The greatest troop-carrier among all the ships was the *Leviathan*, which landed 12,000 men, or the equivalent of a German division, in France every month.

(8) The fastest transports were the *Great Northern* and the *Northern Pacific*, which made complete turnarounds, took on new troops, and started back again in 19 days.

FOOD, CLOTHING, AND EQUIPMENT

(1) The problems of feeding and clothing the Army were difficult because of the immense quantities involved rather than because of the difficulty of manufacturing the articles needed.

(2) Requirements for some kinds of clothing for the Army were more than twice as great as the prewar total American production of the same articles.

(3) To secure the articles needed for the Army the Government had to commandeer all the wool and some other staple articles in the United States and control production through all its stages.

(4) The distribution of supplies in the expeditionary forces required the creation of an organization called the Services of Supply, to which one-fourth of all the troops who went overseas were assigned.

(5) American Engineers built in France 17 new ship berths, 1,000 miles of standard-gauge track, and 125 miles of narrow-gauge track.

(6) The Signal Corps strung in France 100,000 miles of telephone and telegraph wire.

(7) Prior to the armistice 40,000 trucks were shipped to the forces in France.

(8) Construction projects in the United States cost twice as much as the Panama Canal, and construction overseas was on nearly as large a scale.

(9) The Army in France always had enough food and clothing.

SPRINGFIELDS, ENFIELDS, AND BROWNING

(1) When war was declared the Army had on hand nearly 600,000 Springfield rifles. Their manufacture was

continued, and the American Enfield rifle designed and put into production.

(2) The total production of Springfield and Enfield rifles up to the signing of the armistice was over 2,500,000.

(3) The use of machine guns on a large scale is a development of the European War. In the American Army the allowance in 1912 was four machine guns per regiment. In 1919 the new Army plans provided for an equipment of 336 guns per regiment, or eighty-four times as many as in 1912.

(4) The entire number of American machine guns produced to the end of 1918 was 227,000.

(5) During the war the Browning automatic rifle and the Browning machine gun were developed, put into quantity production, and used in large numbers in the final battles in France.

(6) The Browning machine guns are believed to have been more effective than the corresponding weapons used in any other army.

(7) American production of small-arms ammunition amounted to approximately 3,500,000,000 rounds, of which 1,800,000,000 were shipped overseas.

TWO THOUSAND GUNS ON THE FIRING LINE

(1) When war was declared the United States had sufficient light artillery to equip an army of 500,000 men, and shortly found itself confronted with the problem of preparing to equip 5,000,000 men.

(2) To meet the situation it was decided in June, 1917, to allot our guns to training purposes and to equip our forces in France with artillery conforming to the French and British standard calibers.

(3) It was arranged that we should purchase from the French and British the artillery needed for our first divisions and ship them in return equivalent amounts of steel, copper, and other raw materials so that they could either manufacture guns for us in their own factories or give us guns out of their stocks and replace them by new ones made from our materials.

(4) Up to the end of April, 1919, the number of complete artillery units produced in American plants was more than 3,000, or equal to all those purchased from the French and British during the war.

(5) The number of rounds of complete artillery ammunition produced in American plants was in excess of 20,000,000, as compared with 10,000,000 rounds secured from the French and British.

(6) In the first 20 months after the declaration of war by each country the British did better than we did in the production of light artillery, and we excelled them in producing heavy artillery and both light and heavy shells.

(7) So far as the Allies were concerned, the European war was in large measure fought with American powder and high explosives.

(8) At the end of the war American production of smokeless powder was 45 per cent greater than the French and British production combined.

(9) At the end of the war the American production of high explosives was 40 per cent greater than Great Britain's and nearly double that of France.

(10) During the war America produced 10,000 tons of gas, much of which was sold to the French and British.

(11) Out of every hundred days that our combat divisions were in line in France they were supported by their own artillery for 75 days, by British artillery for 5 days, and by French for 1½ days. Of the remaining 18½ days that they were in line without artillery, 18 days were in quiet sectors, and only one-half of one day in each hundred was in active sectors.

(12) In round numbers, we had in France 3,500 pieces of artillery, of which nearly 500 were made in America, and we used on the firing line 2,250 pieces, of which over 100 were made in America.

AIRPLANES, MOTORS, AND BALLOONS

(1) On the declaration of war the United States had 55 training airplanes, of which 51 were classified as obsolete and the other 4 as obsolescent.

(2) When we entered the war the Allies made the designs of their planes available to us and before the end of hostilities furnished us from their own manufacture 3,800 service planes.

(3) Aviation training schools in the United States graduated 8,602 men from elementary courses and 4,028 from advanced courses. More than 5,000 pilots and observers were sent overseas.

(4) The total personnel of the Air Service, officers, students, and enlisted men, increased from 1,200 at the outbreak of the war to nearly 200,000 at its close.

(5) There were produced in the United States to November 30, 1918, more than 8,000 training planes and more than 16,000 training engines.

(6) The De Havilland-4 observation and day bombing plane was the only plane the United States put into quantity production. Before the signing of the armistice 3,227 had been completed and 1,885 shipped overseas. The plane was successfully used at the front for three months.

(7) The production of the 12-cylinder Liberty engine was America's chief contribution to aviation. Before the armistice 13,574 had been completed, 4,435 shipped to the expeditionary forces, and 1,025 delivered to the Allies.

(8) The first flyers in action wearing the American uniform were members of the Lafayette Escadrille, who were transferred to the American service in December, 1917.

(9) The American air force at the front grew from 3 squadrons in April to 45 in November, 1918. On November 11 the 45 squadrons had an equipment of 740 planes.

(10) Of 2,698 planes sent to the zone of the advance for American aviators 667, or nearly one-fourth, were of American manufacture.

(11) American air squadrons played important rôles in the battles of Chateau-Thierry, St. Mihiel, and the Meuse-Argonne. They brought down in combat 755 enemy planes, while their own losses of planes numbered only 357.

TWO HUNDRED DAYS OF BATTLE

(1) Two out of every three American soldiers who reached France took part in battle. The number who reached France was 2,084,000, and of these 1,390,000 saw active service at the front.

(2) Of the 42 divisions that reached France 29 took part in active combat service. Seven of them were Regular Army divisions, 11 were organized from the National Guard, and 11 were made up of National Army troops.

(3) American divisions were in battle for 200 days and engaged in 13 major operations.

(4) From the middle of August until the end of the war the American divisions held during the greater part of the time a front longer than that held by the British.

(5) In October the American divisions held 101 miles of line, or 23 per cent of the entire western front.

(6) On the 1st of April the Germans had a superiority of 324,000 in rifle strength. Due to American arrivals the allied strength exceeded that of the Germans in June and was more than 600,000 above it in November.

(7) In the Battle of St. Mihiel 550,000 Americans were engaged, as compared with about 100,000 on the Northern side in the Battle of Gettysburg. The artillery fired more than 1,000,000 shells in four hours, which is the most intense concentration of artillery fire recorded in history.

(8) The Meuse-Argonne Battle lasted for 47 days, during which 1,200,000 American troops were engaged.

(9) The American battle losses of the war were 50,000 killed and 206,000 wounded. They were heavy when counted in terms of lives and suffering, but light compared with the enormous price paid by the nations at whose sides we fought.

HEALTH AND CASUALTIES

(1) Of every 100 American soldiers and sailors, who served in the war with Germany, two were killed or died of disease during the period of hostilities.

(2) The total battle deaths of all nations in this war were greater than all the deaths in all the wars in the previous 100 years.

(3) Russian battle deaths were 34 times as heavy as those of the United States, those of Germany 32 times as great, the French 28 times, and the British 18 times as large.

(4) The number of American lives lost was 125,500, of which about 10,000 were in the Navy, and the rest in the Army and the marines attached to it.

(5) In the American Army the casualty rate in the infantry was higher than in any other service, and that for officers was higher than for men.

(6) For every man killed in battle six were wounded.

(7) Five out of every six men sent to hospitals on account of wounds were cured and returned to duty.

(8) In the expeditionary forces battle losses were twice as large as deaths from disease.

(9) In this war the death rate from disease was lower, and the death rate from battle was higher than in any other previous American war.

(10) Inoculation, clean camps, and safe drinking water, practically eliminated typhoid fever among our troops in this war.

(11) Pneumonia killed more soldiers than were killed in battle. Meningitis was the next most serious disease.

(12) Of each 100 cases of venereal disease recorded in the United States, 96 were contracted before entering the Army and only 4 afterwards.

(13) During the entire war available hospital facilities in the American Expeditionary Forces were in excess of the needs.

* * * * *

"Often, indeed, after a successful war, the victor has fallen asleep in a fallacious assurance of his superiority, while his opponent, striving to work out the causes of his defeat, struggles to recover from it. Hence the victor of today becomes the vanquished of tomorrow. Rossbach succeeds Turkheim; Sedan, Jena; Rethondes, Sedan. May we not forget it!"—TURENNE.

Summary of American Participation in the War

Total armed forces, including Army, Navy, Marine Corps, etc.....	4,800,000
Total men in the Army.....	4,000,000
Men who went overseas.....	2,086,000
Men who fought in France.....	1,390,000
Greatest number sent in one month.....	306,000
Greatest number returning in one month.....	333,000
Tons of supplies shipped from America to France.....	7,500,000
Total registered in draft.....	24,234,021
Total draft inductions.....	2,810,296
Greatest number inducted in one month.....	400,000
Graduates of Line Officers' Training Schools.....	80,568
Cost of war to April 30, 1919.....	\$21,850,000,000
Cost of Army to April 30, 1919.....	\$13,930,000,000
Battles fought by American troops.....	13
Months of American participation in the war.....	19
Days of battle.....	200
Days of duration of Meuse-Argonne battle.....	47
Americans in Meuse-Argonne battle.....	1,200,000
American casualties in Meuse-Argonne battle.....	120,000
American battle deaths in war.....	50,000
American wounded in war.....	206,000
American deaths from disease.....	57,500
Total deaths in the Army.....	115,500

Infantry Units of the A.E.F.

The infantry units of the A.E.F. were organized and commanded generally as follows:

Platoon: 58 men, commanded by 2d or 1st lieutenant.

Company: 6 officers and 250 men, by a captain.

Battalion: 4 companies, by a major.

Regiment: 3 battalions and a machine-gun company, 112 officers and 3,720 men, by a colonel.

Brigade: 2 regiments and a machine-gun battalion, 258 officers and 8,211 men, by a brigadier general.

The organization of the field artillery, engineers, signal corps, air service, and other arms and services was along lines similar to the infantry.

Division: 2 infantry and 1 field artillery brigades, 1 engineer regiment, 1 machine-gun battalion, 1 signal battalion, and trains; 72 guns, 260 machine guns, 17,666 rifles; 979 officers, 27,082 men; by a major general.

Corps: 2 to 6 divisions, by a major general.

Army: 3 to 5 corps, by a lieutenant general or major general.

Group of Armies: 2 or 3 armies, by a general, lieutenant general or major general.

Field Army and Corps

PRINCIPLES

1. The army is the largest self-contained unit; it is the fundamental unit of strategical maneuver, the fundamental unit in the planning of war and the instrument of decisive execution.

2. The army has territorial, tactical, administrative and supply functions.

3. In order that the army commander may efficiently execute the assigned or implied mission, in order that his forces may be able to maintain their continuity of operation over a long period, he must be provided with an organization which assures continuity in direction, control and command.

Furthermore, since every situation and every theater of operations will, by their own peculiarities, make particular demands in the distribution and composition of the forces participating, our army organization must be flexible.

4. The corps is primarily a tactical unit of execution and maneuver, capable of engaging in battle on an extended front until a decision is reached. It must have the power of absorption and utilization, of reinforcing units. It must be flexible.

5. This flexibility for combat is obtained for the army and the corps by prescribing no fixed allotment of combat elements and especially by retaining in GHQ a pool of those elements, such as large tank units, combat aviation, artillery, and cavalry divisions, whose allotment to the army is made as the situation requires.

6. It is in the *command, reconnaissance and security*, and *service* echelons that we provide the *constant potential* power of prolonged battle life.

7. It is in the *combat* echelon that we provide the *actual* power of prolonged battle life.

Infantry Characteristics

1. Human element predominates.—Battle control difficult; high degree of training, discipline, leadership, and morale essential.

2. Weapons light, portable, immediately available, and highly effective at close and mid range against local resistance. Fire-power considerable, but entirely inadequate to combat a force of all arms.

3. Foot troops of low mobility but high maneuverability—can operate over almost any type of terrain.

4. Ability to utilize terrain to best advantage (use of cover) and advance in inconspicuous formations.

5. Fire-power and tactical mobility properly proportioned to facilitate employment of combined fire and movement.

6. Ability to close with the enemy and overpower him by shock action (bayonet, grenades, tanks).

7. Ability to hold ground gained for an indefinite period of time.

8. Vulnerability high—heavy casualties usual. "Infantry bears the brunt of battle."

THE FIRST GENERAL STAFF — 1903



Left to Right —

REAR ROW: Major Samuel Reber, Major George W. Goethals, Major John G. D. Knight, Captain David DuB. Gaillard, Captain Frank DeW. Ramsey, Captain Peyton C. March, Captain Joseph T. Dickman, Captain Horace M. Reeve, Lieutenant Colonel James T. Kerr, Captain Dennis E. Nolan, Captain Hugh J. Gallagher.

SECOND ROW: First Lieutenant John C. Oakes, Captain Wm. C. Rivers, Captain Charles T. Menoher, Lieutenant Colonel Henry A. Greene, Major Edward J. McClelland, Major Wm. A. Mann, Major Montgomery M. Macomb, Lieutenant Colonel Sedgewick Pratt, Major Wm. D. Beach, Major Wm. P. Duvall, Captain Wm. W. Gibson.

FRONT ROW: Lieutenant Colonel Wm. A. Simpson, Colonel John B. Kerr, Colonel Alexander McKenzie, Brigadier General Wm. H. Carter, Lieutenant General Samuel B. M. Young, Brigadier General Tasker H. Bliss, Colonel Thomas H. Barry, Colonel Enoch H. Crowder, Lieutenant Colonel Henry P. McCain.

HISTORY OF THE COMMAND AND GENERAL STAFF SCHOOL



PART VII

When in 1917, the tolerance of our people broke, and they sent General Pershing with a staff of selected officers to Europe to prepare the way for the coming of a great army, several important members of this staff were graduates of Fort Leavenworth and from that time on, the comparatively small group of Fort Leavenworth graduates were carefully placed in key positions where they might influence and direct the largest numbers. They came into the command of brigades and divisions. They served in high staff positions. A roster of the First Army at St. Mihiel and in the Argonne shows the names of many graduates from Fort Leavenworth. They served at General Headquarters both in the United States and in France. They organized and conducted great schools modeled on the one they had attended at Fort Leavenworth.

When General Pershing demanded an American Army in an American Sector in France, he relied upon the Fort Leavenworth graduates to carry the project through. That they fulfilled his expectations is shown by a statement which he made in an address at the Army War College on September 2, 1924. On this occasion he said:

"During the World War, the graduates of Leavenworth and the War College held the most responsible positions in our armies, and I should like to make it of record, that, in my opinion, had it not been for the able and loyal assistance of the officers trained at these schools, the tremendous problems of combat, supply, and transportation could not have been solved."

The experience derived in the World War enabled our Legislators, assisted by the General Staff of the Army, to write into our laws the National Defense Act of 1920, which as time passes is receiving greater and greater approval from our people. This law provided for the organization and training of a great United States Army with three components—the Regular Army, the National Guard, and the Organized Reserves. It provided for a great system of progressive military education for the officers of this Army which should have its beginnings in West Point, the Reserve Officers Training Corps of the schools and colleges, and in the basic schools in the organizations of the Regular Army and the National Guard. Then there developed the Branch or Special Service Schools with courses both basic and ad-

vanced. With proper periods of service with troops between the periods of school attendance, selected officers were to go to the Army School of the Line and the General Staff College at Fort Leavenworth and finally, after a further selection, some were to attend the Army War College at Washington, D. C.

Out to Fort Leavenworth, to effect the new organization of the General Service Schools, came Major General Charles H. Muir and Colonel LeRoy Eltinge with their World War experience, and especially Colonel Hugh A. Drum, with the experience of Chief of Staff in the First American Army which had with great distinction won the great victories of St. Mihiel and the Meuse-Argonne. Also there came many other officers whose war service as commanders of divisions, artillery and infantry brigades, chiefs of staff, and heads of important staff sections was still vivid. These officers built a great new school, organizing it for instruction along the lines of staff organization which General Pershing had used in France and which he had brought back and installed in War Department Headquarters in Washington and in each of the Corps Area Headquarters. This organization was built around four groups corresponding to the four principal sections of the staff of a military organization, namely: Administration, Military Intelligence, Military Operations, and Supply. The work of organization of the school was so well done that changes have been few during the years following the World War.

The War developed so rapidly and involved such increasingly great numbers of men, new weapons, and seemingly new phases of warfare, that during its progress the instruction of our officers was of necessity based upon the writings of foreign officers. One of the great accomplishments of the leaders and faculty of the General Service Schools during the period of reorganization was the preparation of a complete series of military texts, in which the teachings were distinctly American in character. There were a large number of these new texts, including studies in the tactics and technique of the various arms; in the principles and decisions involved in handling the division, the corps, and the army; and in duties connected with command, staff, and supply.

(To be continued)

